LEVIN ENTERPRISES, INC.
LEVIN RICHMOND TERMINAL CORP.
402 Wright Avenue
Richmond, CA 94804
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September 11, 2015

Ms. Rachelle Thompson
United States Environmental Protection Agency Region 9
75 Hawthorne Street
San Francisco, California 94105

RE: 2014-2015 Annual Report for United Heckathorn Superfund Site
Upland Capping System
Richmond, California

Dear Ms. Thompson:

Enclosed please find the 2014-2015 Annual Report for the United Heckathorn Superfund Site Upland Capping System presenting inspection, monitoring, and maintenance activities performed on the upland capping and drainage system at the United Heckathorn Superfund Site located at 402 Wright Avenue, Richmond, California. This report was prepared in accordance with the *Revised Draft Operations and Maintenance Plan, Upland Capping System Former United Heckathorn Site*.

Please feel free to contact me if you have any questions or concerns with the attached report.

Sincerely,

Gary Levin

Gary Levin
Chief Executive Officer
(510) 307-4091

Attachment: 2014-2015 Annual Report for United Heckathorn Superfund Site Upland Capping System

Weiss Associates Environmental Science, Engineering, and Management
2200 Powell Street, Suite 925, Emeryville, CA 94608-1879 Fax: 510-547-5043 Phone: 510-450-6000

2014-2015 ANNUAL REPORT

FOR

UNITED HECKATHORN SUPERFUND SITE UPLAND CAPPING SYSTEM RICHMOND, CALIFORNIA

prepared for

Levin Richmond Terminal Corporation
402 Wright Avenue
Richmond, California 94804

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prepared by:

Weiss Associates
2200 Powell Street, Suite 925
Emeryville, CA 94608

Weiss Job No. 426-2026.01 Task 2

Weiss Associates' work for the Levin Richmond Terminal Corporation was conducted under my supervision. To the best of my knowledge, the data contained herein are true and accurate, are based on what can be reasonably understood as a result of this project, and satisfy the scope of work prescribed by the client for this project. The data, findings, recommendations, specifications or professional opinions were prepared solely for the use of the Levin Richmond Terminal Corporation in accordance with generally accepted professional engineering and geologic practice. We make no other warranty, either expressed or implied, and are not responsible for the interpretation by others of the contents herein.

Scott Bourne, PE
Principal

September 11, 2015
Date

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ACRONYMS

BMP	best management practices
Calscience	Eurofins CalScience Environmental Laboratories
DDD	dichlorodiphenyldichloroethane
DDE	dichlorodiphenyldichloroethene
DDT	dichlorodiphenyltrichloroethane
Heckathorn site or Site	United Heckathorn Superfund Site
H&R	H&R Plumbing and Drain Cleaning, Inc.
IGP	Storm Water Industrial General Permit
LRT	Levin Richmond Terminal
LRTC	Levin Richmond Terminal Corporation
msl	mean sea level
NPDES	National Pollutant Discharge Elimination System
O&M	operations and maintenance
O&M Plan	*Revised Draft Operations and Maintenance Plan, Upland Capping System, Former United Heckathorn Site*
RCRA	Resource Conservation and Recovery Act
ROD	Record of Decision
Subtronic	Subtronic Corporation
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resource Control Board
µg/L	micrograms per liter
USEPA	United States Environmental Protection Agency
Weiss	Weiss Associates

1. INTRODUCTION

This 2014-2015 Annual Report was prepared to describe the inspection, monitoring, and maintenance activities performed on the upland capping and storm water drainage systems at the United Heckathorn Superfund Site (Heckathorn site or Site) located in the Richmond Harbor near the intersection of the Santa Fe Channel and Inner Harbor Channel (Figure 1). The Site is part of the Levin Richmond Terminal (LRT) and this report has been prepared by Weiss Associates (Weiss) under contract with the Levin Richmond Terminal Corporation (LRTC).

1.1 Background

From 1947 through 1966, the Heckathorn site was used for processing, packaging, and shipping of pesticides including aldrin, dieldrin, dichlorodiphenyltrichloroethane (DDT), and endrin. In 1994, the United States Environmental Protection Agency (USEPA) adopted a Record of Decision (ROD) for the Site which limits use of the property and required LRTC to design, construct, and maintain a concrete cap to prevent erosion of upland soils (USEPA, 1994b).

In 1996, LRTC entered into a Consent Decree with the USEPA, which outlined LRTC's responsibilities for long-term management of the upland capping system located on the northern half of the Main Terminal at the LRT (United States District Court, 1996). LRTC performs operations and maintenance (O&M) activities in accordance with the *Revised Draft Operations and Maintenance Plan, Upland Capping System, Former United Heckathorn Site* (O&M Plan; PES, 1999).

The *Third Five-Year Review Report for United Heckathorn Superfund Site, Richmond, California* (Third Five-Year Review; USEPA, 2011) included recommendations for additional best management practices (BMPs) to be included in the O&M Plan, including annual monitoring for cap cracking and settlement, establishing monitoring points on the cap for settlement monitoring, collecting sediment samples from the storm drain interceptors for pesticide analysis, and periodic video inspections of the underground drainage systems.

1.2 Upland Cap Inspections

In order to ensure long-term protection of human health and the environment, the remedial action goal established by the USEPA for upland and embankment soils is the prevention of erosion and transport into the Lauritzen Channel (USEPA, 1994a).

The objective of the cap inspection and storm water monitoring programs is to identify any potential release of pesticide-impacted soil by examining the integrity of the cap system through inspection and storm water monitoring (USEPA, 2011.)

1.3 Contents of this Report

The following sections describe activities to maintain the upland cap, including:

- Capping system activities;
- Storm water system activities;
- Annual cap inspection; and
- Proposed site work for 2015-2016.

A conclusion with Weiss's opinion as to the overall condition and effectiveness of the cap in meeting the upland cap remediation objective is also included.

2. SITE DESCRIPTION

The LRT is located at 402 Wright Avenue in Richmond, California (Figure 1). The Heckathorn site includes the northern five acres of the Main Terminal at the LRT, known as the Upland Area (Figure 2).

2.1 Upland Area Description and Current Use

The Upland Area is bounded by Cutting Boulevard and railroad tracks to the north; South Fourth Street, Wright Avenue, and Sims Metal Management to the east; the Santa Fe Channel to the south; and the Lauritzen Channel, Manson Construction Company, and an unoccupied industrial property to the west. The majority of the Upland Area is relatively flat with surface elevations of approximately 9 feet above mean sea level (msl). The portion of the Upland Area north of the Lauritzen Channel was raised to approximately 15 feet above msl.

The Upland Area is used primarily for storage of dry bulk product and railroad operations. Photographs taken during the site inspection are included in Appendix A.

2.2 Nearby Water Bodies

The storm water system in the Upland Area discharges directly to the Lauritzen Channel (Figure 2). The Lauritzen Channel is connected to the San Francisco Bay via the Santa Fe Channel and Richmond Inner Harbor.

2.3 Upland Area Cap

Construction of the concrete cap at the Upland Area began in July 1998 and was completed in July 1999. Installation of the cap consisted of: (1) site grading to promote surface runoff to collection points; (2) installation of a drainage system to collect surface runoff, including BMPs for storm water pollution prevention; and (3) construction of a reinforced concrete cap in the majority of the 5-acre area and construction of a geotextile fabric and gravel cap in the railroad track area. The concrete and gravel/geotextile cap areas were designed to protect against erosion of contaminated soils and subsequent flow into the channel associated with surface water runoff (USEPA, 2011).

2.4 Storm Water Collection System

The Upland Area storm water collection system (Figure 3) was installed in 1998 and is part of the larger storm water collection system at the LRT. The facility is paved with asphalt and concrete and is graded to direct surface water runoff via sheet flow or shallow swales to drop inlets.

The drop inlets drain to below-grade interceptors via underground pipe. Five storm water interceptors, SW-3 through SW-7, are located within the Upland Area storm water drainage system and receive storm water runoff. The wooden pier deck that extends over open water is not connected to the storm water drainage system.

Storm water interceptors SW-3 through SW-7 were constructed with compartments and steel baffles to allow the settling of sediments and separation of oil/grease and floatables, thereby decreasing the potential for outflow of these pollutants into the Lauritzen Channel. Interceptors SW-3 through SW-7 were constructed with a capacity to provide a five-minute retention time during a 10-year, 24-hour storm event (PES, 1999). Interceptors SW-3 through SW-7 are equipped with normally closed gate valves, which can be opened during heavy rains to enable discharge to the Lauritzen Channel.

Between 2009 and 2012, interceptor SW-3 was modified through the installation of two new pumps, valves, and piping to enable discharge to a 20,000-gallon nominal capacity rectangular tank for sediment settling. Storm water collected in the tank was discharged or reused on-site for dust suppression.

In 2014, pumps and piping were installed to convey storm water collected in the SW-4, SW-6, and SW-7 interceptors to interceptor SW-5. Pumps, piping, and a 20,000-gallon nominal capacity rectangular tank were then installed to facilitate additional sediment removal for the combined SW-4/-5/-6/-7 interceptors, prior to discharge or reuse on-site for dust suppression.

In 2015, piping was installed from interceptor SW-3 to the 20,000 gallon tank located near interceptor SW-5, and the 20,000 gallon tank near interceptor SW-3 was relocated to the SW-5 area. A storm water treatment system will be installed at the SW-5 discharge location in 2015 to prevent or reduce the discharge of pollutants in storm water from industrial activities. The system will treat storm water pumped from interceptors SW-3, SW-4, SW-5, SW-6, and SW-7 using flocculation, settling, and filtration methods. Treated storm water will be discharged to the Lauritzen Channel via the SW-5 outfall.

3. CAPPING SYSTEM ACTIVITIES

This section describes repair and routine O&M of the upland capping system performed during the 2014-2015 reporting year. No maintenance activities involving the disturbance of or excavation into underlying, impacted soil were conducted.

3.1 Repair of Concrete Cap

No maintenance or major repair involving replacement of portions of the concrete cap was conducted during the 2014-2015 reporting year.

3.2 Repair of Gravel Cover

Additional rock was placed on top of the existing gravel cover in the vicinity of interceptor SW-5 in July 2014 to ensure proper coverage.

No other major repair involving replacement of portions of the gravel cover was conducted during the 2014-2015 reporting year.

3.3 Erosion Control

No major erosion control work was performed during the 2014-2015 reporting year.

4. STORM WATER SYSTEM ACTIVITIES

This section describes the storm water collection system activities performed during the 2014-2015 reporting period. Activities included sampling of storm water, cleaning and inspection of all Heckathorn storm drain piping, and repairs of damaged piping associated with interceptors SW-3 and SW-5.

4.1 Storm Water Sampling

The O&M Plan (PES, 1999) requires storm water sampling to assess the effectiveness of the upland capping system. During the 2014-2015 reporting year, storm water discharges associated with industrial activities at the LRT were subject to the State Water Resources Control Board (SWRCB) Water Quality Order 97-03-DWQ for National Pollutant Discharge Elimination System (NPDES) General Permit No. CAS000001 (*Waste Discharge Requirements for Discharges of Storm Water Associated with Industrial Activities excluding Construction Activities*), also referred to as the Storm Water Industrial General Permit (1997 IGP; SWRCB, 1997). The O&M Plan expands the storm water monitoring requirements to include sampling for pesticides by USEPA Method 8081A in storm water discharges originating from the Upland Area (i.e., interceptors SW-3 through SW-7). Specifically, the O&M Plan requires samples to be collected at the outlet of each of the five interceptors. However, due to upgrades to storm water treatment at LRT, storm water collected at interceptors SW-4 through SW-7 was rerouted to a single sedimentation tank beginning in 2014 (as detailed in Section 2.4). Samples during the 2014-2015 reporting year were therefore collected from the SW-3 discharge and combined SW-4 through SW-7 discharges (SW-4/-5/-6/-7).

Storm water monitoring requirements for the 2014-2015 reporting year are documented in LRTC's *Storm Water Pollution Prevention Plan* (SWPPP; Weiss, 2014b), which details monitoring procedures to comply with the 1997 IGP and the O&M Plan. Sample collection during the 2014-2015 reporting year was performed as follows:

- Sampling during four storm events producing discharges during the wet season (October through May);
- Collecting samples from a storm preceded by at least three days of dry weather; and
- Collecting samples during normal operating hours.

As of July 1, 2015, storm water discharges at LRT are regulated under the SWRCB Water Quality Order No. 2014-0057-DWQ, NPDES General Permit No. CAS000001 (2015 IGP), which is the successor permit to the 1997 IGP. Sample collection beginning in the 2015-2016 reporting year will be performed in conjunction with the 2015 IGP, revised LRT SWPPP (Weiss, 2015), and the O&M Plan.

4.1.1 Sample Results

During the 2014-2015 reporting year, storm water from the SW-3 and the combined SW-4/-5/-6/-7 discharge locations was sampled during three storm events, on November 20, December 2, and December 11, 2014. No discharge was produced at either location during the fourth storm event on February 6, 2015. Tables 1 and 2 provide the laboratory analytical results for pesticides and general parameters/metals, respectively. This Annual Report focuses on the evaluation of analytical results for pesticides.

Storm water samples were submitted to Eurofins CalScience Environmental Laboratories (Calscience) in Concord, California. Original laboratory reports, including applicable chain-of-custody forms, are included as part of the *2014-2015 Annual Storm Water Monitoring Report*[1] provided in Appendix B.

Pesticides were detected in the November 20, 2014 storm water samples as follows:

- DDT was detected at a concentration of 0.022 micrograms per liter (µg/L) in the SW-4 through SW-7 discharge;
- Endosulfan I was detected at a concentration of 0.042 µg/L in the SW-4 through SW-7 discharge;
- Endrin was detected at a concentration of 0.012 µg/L in the SW-4 through SW-7 discharge; and
- Heptachlor was detected at a concentration of 0.016 µg/L in the SW-3 discharge.

Pesticides were detected in the December 2, 2014 storm water samples as follows:

- DDT was detected at concentrations of 0.019 and 0.0035 µg/L in the SW-3 and SW-4 through SW-7 discharges, respectively.
- Dichlorodiphenyldichloroethene (DDE) was detected at a concentration of 0.014 µg/L in the SW-3 discharge.
- Dichlorodiphenyldichloroethane (DDD) was detected at a concentration of 0.0028 µg/L in the SW-3 discharge.

Pesticides were detected in the December 11, 2014 storm water samples as follows:

- DDT was detected at concentrations of 0.039 and 0.0049 µg/L in the SW-3 and SW-4 through SW-7 discharges, respectively.
- DDD was detected at concentrations of 0.0023 and 0.0033 µg/L in the SW-3 and SW-4 through SW-7 discharges, respectively.
- Endosulfan I was detected at a concentration of 0.030 µg/L in the SW-3 discharge.

[1] Note that laboratory analytical reports include results from other sampling locations (i.e., TS1-E, SW-11, and SW-12) collected as part of the LRT Storm Water Monitoring Program for 2014-2015.

4.1.2 Quality Assurance/Quality Control

The O&M Plan (PES, 1999) requires at least one duplicate sample be collected per storm sampling event. During the 2014-2015 reporting year, duplicate samples were submitted from the November 20 and December 2, 2014 sampling events. During the December 11, 2014 sampling event a duplicate sample was submitted for a discharge location not associated with the Upland Cap area at LRT. No data quality issues were reported through the data validation process.

4.1.3 Assessment of Results

The pesticides detected in storm water samples collected during the 2014-2015 storm water season were consistent with historical concentrations. Appendix C provides concentration trend charts for DDT[2] and dieldrin from 2011 to present for SW-3, SW-4, SW-5, SW-6, SW-7, and the combined SW-4/-5/-6/-7 storm water discharges. DDT and dieldrin were selected for plotting because they have final remediation levels established in the ROD (USEPA, 1994b). The charts provide both detected concentrations and non-detect results.[3] Prior to the 2013-2014 storm water season, the laboratory method detection limits for DDT and dieldrin were above the remediation goals and therefore the current trend charts provide limited information. Lower detection limits were instituted beginning in February 2014.

Annual storm water monitoring will continue in the 2015-2016 reporting year in accordance with the SWPPP and O&M Plan. Trend charts will be updated annually with new data.

4.2 Storm Water Collection System Cleaning and Inspection

The USEPA recommended in the Third Five-Year Review (USEPA, 2011) that LRTC perform periodic underground video inspections to verify the integrity of the underground storm water collection and discharge structures in the Upland cap area. LRTC cleaned and inspected the collection systems associated with interceptors SW-4 and SW-5 during the 2013-2014 reporting year as detailed in the 2013-2014 Annual Report (Weiss, 2014a). Through these inspections, a 2-foot long section of pipe leading to the SW-5 interceptor, between 9 and 11 feet west of catch basin 5D1-14A, was found to be deformed beneath the rail line and had large cracks along the bottom of the pipe.

On September 3 and 4, 2014, the remaining underground collection systems associated with interceptors SW-3, SW-6, and SW-7 were cleaned using a combination hydro-jet/vacuum truck and inspected with video equipment. LRTC contracted Subtronic Corporation (Subtronic) of Martinez, California to clean and perform video inspections on the storm water collection systems in September 2014. Material removed from the pipes included bulk product, sediments, and other debris. Wash water generated was decanted from the vacuum truck and reused on-site for dust suppression. Solids were tested and disposed off-site (see Section 4.2.4). Subtronic then inspected the storm drain lines; details of the inspection are provided below.

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[2] Note that plotted DDT values are for the sum of the 4,4'- and 2,4'- isomers of DDT, DDD, and DDE.
[3] Denoted by "<*n*", where *n* is the sum of the DDT, DDD, and DDE detection limits, if available, or reporting limit otherwise.

4.2.1 SW-3 Inspection

Subtronic accessed and inspected approximately 850 feet of piping in the SW-3 area on September 3 and 4, 2014. A rupture was discovered in the section of pipe spanning between drain inlets 3DI-6 and 3DI-7 (Figure 3). The rupture was located approximately 36 feet to the south of drain inlet 3DI-7 and consisted of a cross-sectional break along the top half of the pipe. Additionally, a sag in the pipe was observed approximately 10 feet to the north of drain inlet 3DI-5, between inlets 3DI-5 and 3DI-6, which did not appear to affect pipe integrity. The remaining pipes were observed to be clean and in good condition, with no cracking or deformation noted and all seams intact. No groundwater infiltration or inflow was observed.

4.2.2 SW-6 Inspection

Subtronic accessed and inspected approximately 200 feet of piping in the SW-6 area on September 4 and 5, 2014. The section of pipe between drain inlets 6DI-15 and 6DI-15A was observed to have a sag, approximately 65 feet from inlet 6DI-15 (Figure 3), which did not appear to affect pipe integrity. All other piping inspected in the SW-6 area was observed to be clean and in good condition, with no cracking or deformation noted and all seams intact. No groundwater infiltration or inflow was observed.

4.2.3 SW-7 Inspection

Subtronic accessed and inspected approximately 150 feet of piping leading to the SW-7 interceptor on September 3, 2014. All pipes were observed to be clean and in good condition, with no cracking or deformation noted and all seams intact. No groundwater infiltration or inflow was observed.

4.2.4 Waste Disposal

The cleaning and inspection activities in the Upland Cap area generated wash water and solid debris. The wash water was evaporated or reused on-site for dust suppression. Sediment collected from interceptors SW-4 and SW-5 was sampled for waste characterization on June 25, 2014; sediment from SW-3, SW-6, and SW-7 was sampled September 5, 2014. A summary of analytical results is presented in Table 3. Sample results showed that some sediment exceeded California's hazardous waste threshold for lead.[4]

Two 55-gallon drums containing sediment were shipped as non-Resource Conservation and Recovery Act (non-RCRA) hazardous waste by NRC Environmental Services to the Crosby & Overton facility in Long Beach, California (UESPA hazardous waste identification number CAD 028409019). The Crosby & Overton facility is authorized to receive Comprehensive Environmental Response, Compensation, and Liability Act waste under the USEPA's Offsite Rule.[5]

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[4] California Code of Regulations, Title 22, Division 4.5, Chapter 11, Section 66261.24, Characteristics of Toxicity.
[5] Email correspondence between Kandice Bellamy of USEPA and Scott Bourne on October 23, 2014. Offsite Rule is from Code of Federal Regulation, Title 40, Section 300.440.

4.3 Storm Water Collection System Repairs

Based on the results of storm drain pipe inspections, LRTC subcontracted H&R Plumbing and Drain Cleaning, Inc. (H&R) of El Sobrante, California to repair the damaged sections of pipes leading to the SW-3 and SW-5 interceptors (Figure 3) on December 9, 2014. H&R performed the repairs using a trenchless method that utilized cure-in-place pipe patch manufactured by Source One Environmental. Pipe patch sleeves were wrapped around a packer, inserted into drain inlets, and pulled through the storm drain piping to the damaged area. The packer was expanded and the pipe patch was pushed against the piping, where it cured to create the patch.

5. ANNUAL SITE INSPECTION

This section describes the findings from the upland capping system inspection conducted during the 2014-2015 reporting year. Mr. Scott Bourne, PE and Mr. Brian Bandy of Weiss performed an annual inspection of the upland capping system on June 15, 2015, in accordance with the O&M Plan (PES, 1999). The inspection included visual observations of the concrete cap, gravel cover, and drainage system throughout the extent of the Upland Area. The findings of the inspection of the Upland Area storm water drainage system are included on the Upland Capping System Inspection Form (Appendix D); photographs taken during the inspection are included in Appendix A.

5.1 Concrete Cap Inspection

Visual observations of the concrete cap concentrated on cracks, joints, high-loading areas, and penetrations looking for signs of deterioration and exposure of the underlying subgrade. Any such defect was considered for its potential to compromise the ability of the cap to prevent wind and water erosion and lead to migration of pesticide-impacted sediments into the adjacent Lauritzen Channel, or exposure to Site workers. Particular emphasis was placed on re-examining areas with cracks and potential settlement as identified in the Third Five-Year Review (USEPA, 2011) and the 2013-2014 Annual Report (Weiss, 2014a).

- **SW-3 Area** – Minor surficial cracks were observed within and to the west of the bulk product storage area, with heavier cracks and seams located to the northwest of interceptor SW-3 at the southern end of the upland capping system (Appendix A; Photos 1, 3, 4, and 5). Cracks and concrete seams identified as high priority in the previous inspections were observed to have been patched (Appendix A; Photo 2).
- **SW-4 Area** – Areas of minor surficial cracks were observed along the rail line south of interceptor SW-4 (Appendix A; Photo 6). Sealant was noted extending from the southeast corner of interceptor SW-4 toward the east (Appendix A; Photo 7). Minor surficial cracks were observed north of interceptor SW-4 (Appendix A; Photo 8).
- **SW-5 Area** – Minor cracks were noted north and south of interceptor SW-5 (Appendix A; Photos 9 and 11). Light gravel cover was observed to the north of interceptor SW-5 (Appendix A; Photo 10).
- **SW-6 Area** – Minor cracks were noted north and northeast of interceptor SW-6 (Appendix A; Photos 12 and 14). Seams and surficial cracks were observed in the eastern swale of the Main Terminal (Appendix A; Photos 15 and 16). Small areas of concrete deterioration were observed in the southern portion of the eastern swale of the Main Terminal (Appendix A; Photos 17 and 18).
- **SW-7 Area** – Minor cracks were observed to the northeast of interceptor SW-7 (Appendix A; Photo 13).

Figure 4 shows the locations of photographs taken to document cracks and gaps shown in Appendix A and described above. No evidence of differential settling or vertical displacement was observed.

No evidence of cracks, gaps, significant cap deterioration, or other material breach with apparent potential for exposure of the underlying subgrade was observed during the inspection. Weiss recommends that LRTC continue to monitor minor cracks noted during the inspection. No repairs are recommended at this time.

5.2 Gravel Cover Inspection

Visual observations of the gravel cover concentrated on identifying areas around the rail and shoreline where gravel cover was thin. A geotextile membrane underlies the gravel cover, but was not visually observed in any of the areas inspected. Below is a summary of observations from the concrete cap inspection.

- **SW-4 Area** – The gravel cover in this area was observed to be thin in one area; the underlying geotextile fabric was not exposed in this area (Appendix A; Photo 6).
- **SW-5 Area** – The gravel cover was observed to be thin in some areas, while the underlying geotextile fabric was not exposed (Appendix A; Photo 10).

No evidence of differential settling or vertical displacement was observed. Overall, the gravel cover was found to be in good condition and functioning properly with no apparent potential for exposure of the underlying subgrade observed. Weiss recommends that LRTC continue to regularly inspect the gravel cover and perform corrective actions as detailed in Section 6.

5.3 Storm Water Collection System Inspection

Visual observations were conducted at the drain inlets and the SW-3, SW-4, SW-5, SW-6, and SW-7 interceptors on June 15, 2015. The interceptors were inspected in June and September 2014 during cleaning of the drainage systems. Details of video inspections of underground pipe at interceptors SW-3, SW-6, and SW-7 are described in Section 4.2. No structural improvements to the drain inlets were found to be necessary during the inspection. The interceptors were found to be in working order with no corrective actions required.

6. PROPOSED SITE WORK FOR 2015-2016

During the 2015-2016 reporting year, O&M activities will continue in accordance with the O&M Plan (PES, 1999):

- Storm water discharge samples will be collected from the combined SW-3 through SW-7 discharge location.
- An annual inspection of the concrete cap and gravel cover in the Upland Area will be performed in the early summer of 2016.
- Inspections of the upland capping system, including the drainage system, will continue as part of the SWPPP (Weiss, 2015) compliance activities and daily operations.

Any repairs to the cap, if required, will be documented and reported in a memorandum to the USEPA and the California Department of Toxic Substances Control. Proposed Site work under the O&M Plan for 2015-2016 is presented in Table 4.

LRTC is in the process of installing a roadway in the upland cap area across three railroad tracks as shown in Figure 4. This work is outside the scope of the O&M Plan but is planned to be completed during the 2015-2016 reporting year.

7. CONCLUSIONS

The annual upland capping system inspection found that the surface cap is in overall good condition and effectively functions to prevent erosion of the underlying soil. Damage was discovered in the underground storm water collection systems at SW-3 and SW-5, which was repaired during the 2014-2015 season.

Continued monitoring and maintenance is required. Maintenance recommendations include:

- Add gravel to gravel cover areas of SW-4 and SW-5;
- Monitor deteriorated concrete in the southern portion of the eastern swale of the Main Terminal at SW-6, and replace affected sections of concrete should further deterioration occur or evidence of underlying soil be observed;
- Implement BMPs identified in the LRT SWPPP (Weiss, 2015).

Pesticides were detected in storm water discharge samples during the 2014-2015 storm water season at concentrations consistent with historical detections. Continued monitoring of the Upland Area's storm water discharges for the presence of pesticides is necessary.

A storm water treatment system will be installed near the SW-5 interceptor to treat the combined storm water discharge from the Upland Cap Area. Treatment will include flocculation, sedimentation, and filtration.

8. REFERENCES

PES Environmental, Inc., 1999. *Revised Draft Operations and Maintenance Plan, Upland Capping System, Former United Heckathorn Site*, March.

State Water Resources Control Board, 1997. *Water Quality Order 97-03-DWQ for National Pollutant Discharge Elimination System General Permit No. CAS000001 (Waste Discharge Requirements for Discharges of Storm Water Associated with Industrial Activities excluding Construction Activities*), April.

United States District Court, Northern District of California, 1996. *Consent Decree, Levin Group RD/RA*, United States of America Plaintiff v. Montrose Chemical Corporation of California, et al., June.

United States Environmental Protection Agency (USEPA), 1994a. *Feasibility Study for the United Heckathorn Superfund Site, Richmond, California.* July.

USEPA, 1994b. *EPA Superfund Record of Decision: United Heckathorn Co., EPA ID: CAD981436363; OU 01, Richmond, CA*, EPA/ROD/R09-96/5021996, October.

USEPA, 2011. *Third Five-Year Review Report for United Heckathorn Superfund Site, Richmond, California*, September.

Weiss, 2014a. *2013-2014 Annual Report for the United Heckathorn Superfund Site, Upland Capping System, Richmond, California,* July.

Weiss, 2014b. *Storm Water Pollution Prevention Plan and Monitoring and Reporting Plan for Levin Richmond Terminal*, 402 Wright Avenue, Richmond, California. September.

Weiss, 2015. *Storm Water Pollution Prevention Plan and Monitoring and Reporting Plan for Levin Richmond Terminal*, 402 Wright Avenue, Richmond, California. June.

FIGURES

Figure 1. Site Location Map — United Heckathorn Superfund Site, Richmond, California

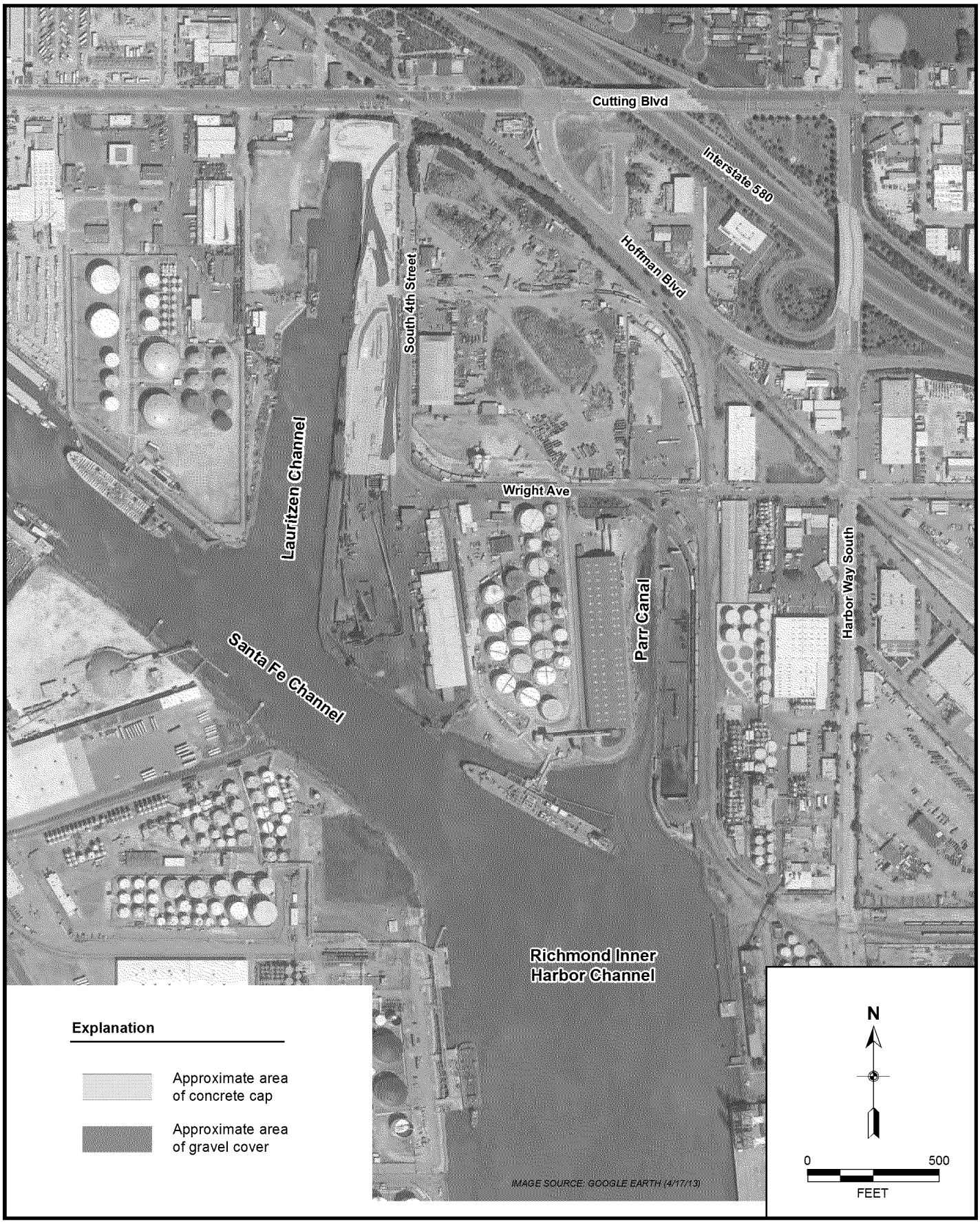

Figure 2. Site Layout — United Heckathorn Superfund Site, Richmond, California

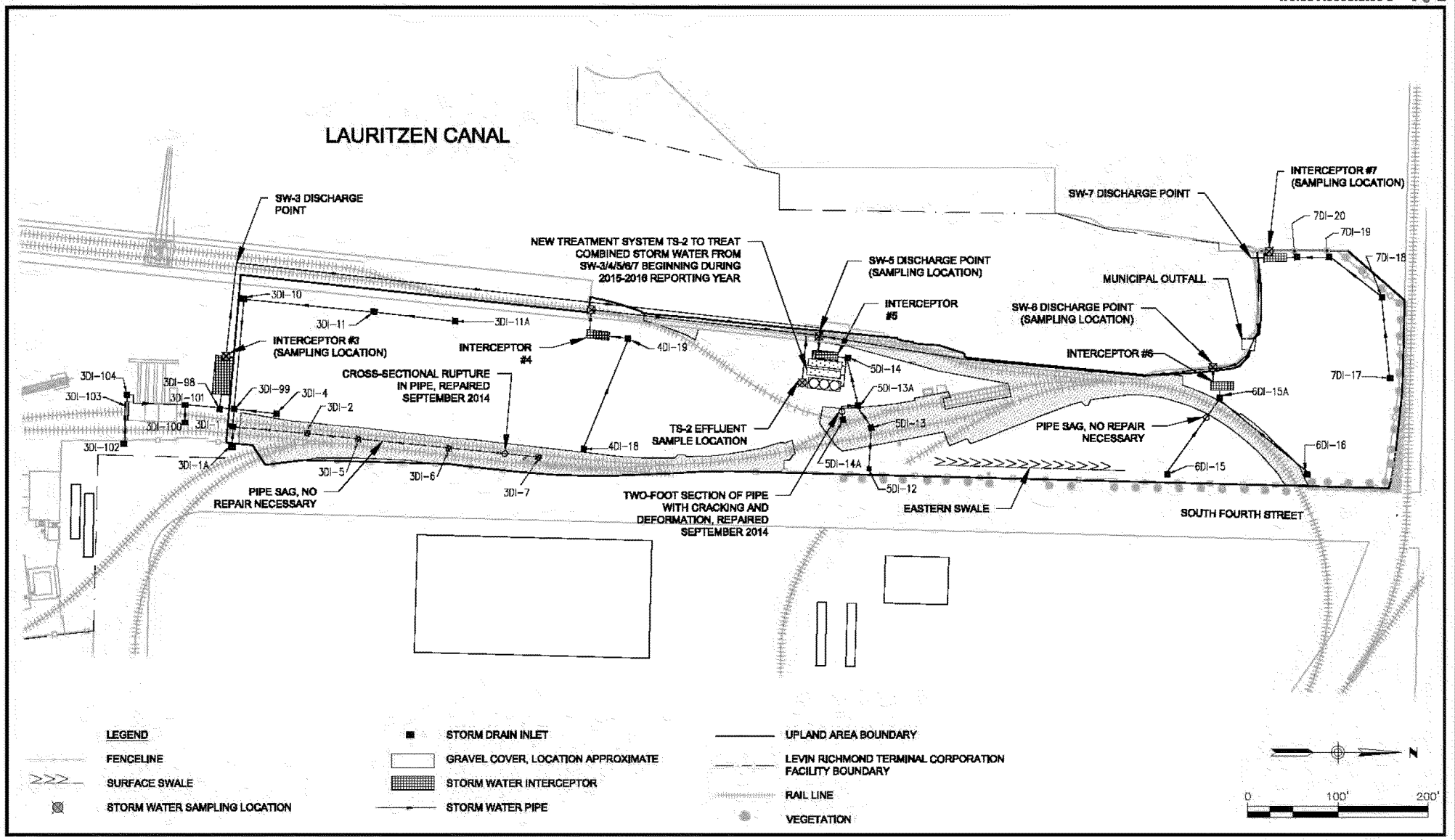

Figure 3. Upland Area Storm Water Collection System Inspection Results and Repairs, United Heckathorn Superfund Site, Richmond, California

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7/31/15

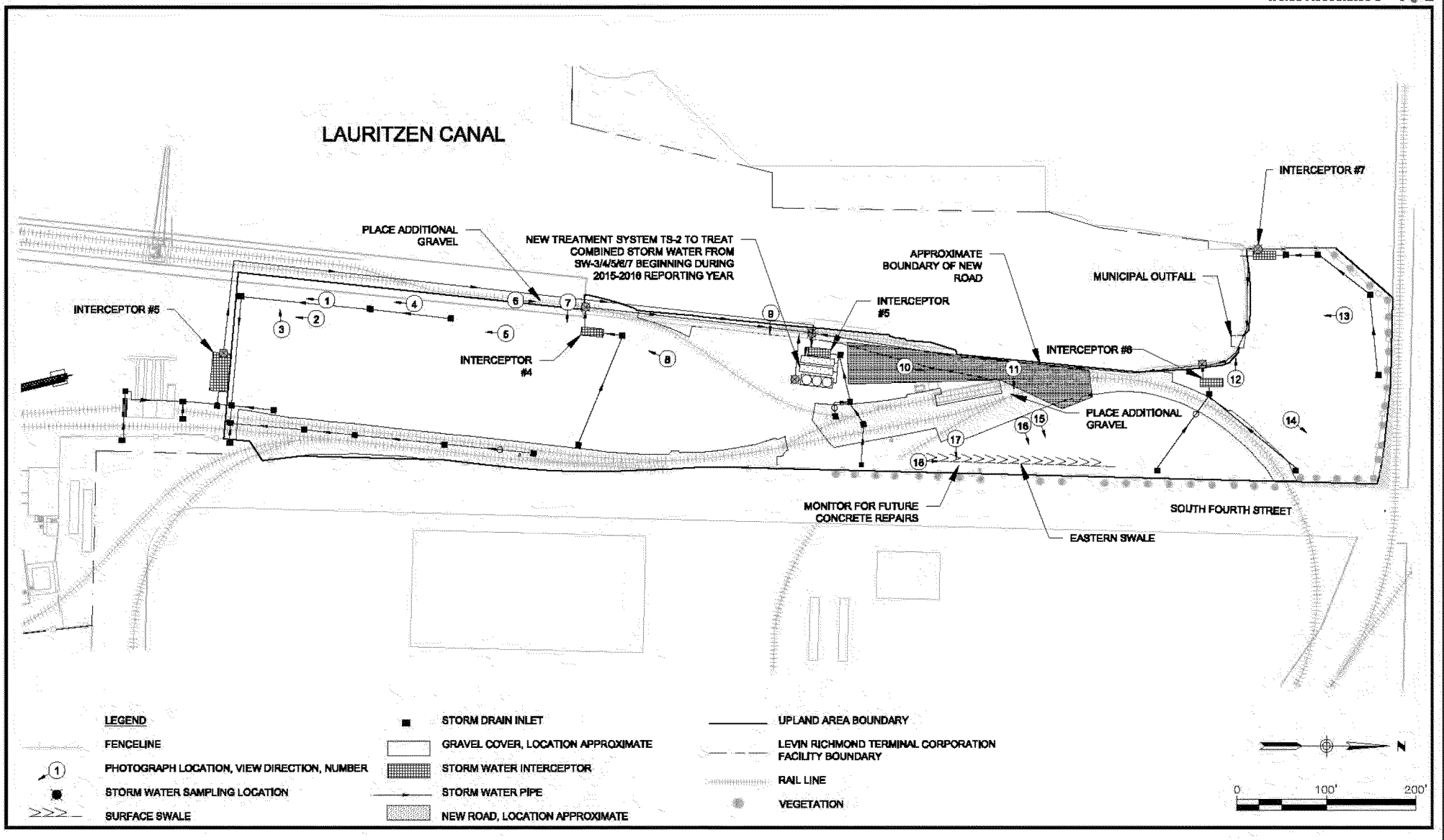

Figure 4. Upland Area Photo Locations and Maintenance Recommendations, United Heckathorn Superfund Site, Richmond, California

TABLES

Table 1. 2014-2015 Annual Storm Water Sampling Data for Pesticides, United Heckathorn Superfund Site, Richmond, California

Discharge Location / Sample Date	Notes	4,4'-DDD	4,4'-DDE	4,4'-DDT	Aldrin	alpha-BHC	alpha-Chlordane	beta-BHC	Chlordane	delta-BHC	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan Sulfate	Endrin	Endrin Aldehyde	gamma-BHC (Lindane)	gamma-Chlordane	Heptachlor	Heptachlor Epoxide	Methoxychlor	Toxaphene
		µg/L																				
SW-3																						
11/20/2014		<0.0019	<0.0019	<0.0019	<0.0019	<0.096	<0.0019	<0.096	<0.96	<0.096	<0.0019	<0.096	<0.096	<0.096	<0.0019	<0.096	<0.0019	<0.0019	**0.0016**	<0.0019	<0.096	<0.024
12/2/2014		**0.0028**	**0.014**	**0.019**	<0.0020	<0.097	<0.0020	<0.097	<0.97	<0.097	<0.0020	<0.097	<0.097	<0.097	<0.0020	<0.097	<0.0020	<0.0020	<0.0020	<0.0020	<0.097	<0.025
12/2/2014	Duplicate	**0.0025**	**0.014**	**0.019**	<0.0019	<0.097	<0.0019	<0.097	<0.97	<0.097	<0.0019	<0.097	<0.097	<0.097	<0.0019	<0.097	<0.0019	<0.0019	<0.0019	<0.0019	<0.097	<0.024
12/11/2014		**0.0023**	<0.0022	**0.039**	<0.0022	<0.095	<0.0022	<0.095	<0.95	<0.095	<0.0022	**0.030**	<0.095	<0.095	<0.0022	<0.095	<0.0022	<0.0022	<0.0022	<0.0022	<0.095	<0.027
SW-4/5/6/7																						
11/20/2014		<0.0019	<0.0019	**0.020**	<0.0019	<0.096	<0.0019	<0.096	<0.96	<0.096	<0.0019	**0.042**	<0.096	<0.096	**0.011**	<0.096	<0.0019	<0.0019	<0.0019	<0.0019	<0.096	<0.024
11/20/2014	Duplicate	<0.0019	<0.0019	**0.022**	<0.0019	<0.10	<0.0019	<0.10	<1.0	<0.10	<0.0019	**0.039**	<0.10	<0.10	**0.012**	<0.10	<0.0019	<0.0019	<0.0019	<0.0019	<0.10	<0.024
12/2/2014		<0.0019	<0.0019	**0.0035**	<0.0019	<0.096	<0.0019	<0.096	<0.96	<0.096	<0.0019	<0.096	<0.096	<0.096	<0.0019	<0.096	<0.0019	<0.0019	<0.0019	<0.0019	<0.096	<0.024
12/11/2014		**0.0033**	<0.0019	**0.0049**	<0.0019	<0.095	<0.0019	<0.095	<0.95	<0.095	<0.0019	<0.095	<0.095	<0.095	<0.0019	<0.095	<0.0019	<0.0019	<0.0019	<0.0019	<0.095	<0.024
Final Remediation Level[a]				0.00059							0.00014											

Notes:
Data presented is from 2014-2015 storm water sampling events.
Detected concentrations are displayed in **bold**.
[a] Based on USEPA Superfund Record of Decision: United Heckathorn Co., October 1994, for surface waters in the Lauritzen, Santa Fe, and lower Richmond Inner Harbor Channels.

Acronyms/Abbreviations:
J - concentration reported is an estimated value
TPH - total petroleum hydrocarbons
µg/L - micrograms per liter
USEPA - United States Environmental Protection Agency
<n - not detected above the reporting limit
--- - not analyzed

Table 2. 2014-2015 Annual Storm Water Sampling Data for General Parameters and Metals, United Heckathorn Superfund Site, Richmond, California

Discharge Location / Sample Date	Notes	pH	Specific Conductance µmhos/cm	Total Oil and Grease mg/L	Total Suspended Solids mg/L	Aluminum µg/L	Copper µg/L	Iron µg/L	Lead µg/L	Nickel µg/L	Zinc µg/L
SW-3											
11/20/2014		6.92	3,500	<5.6	190	1,300	14 J	2,600	9.6 J	6.5 J	210
12/2/2014		7.31	890	<6.6	120	950	7.6	2,100	7.7	3.3	100
12/2/2014	Duplicate	7.31	900	<5.2	120	1,000	7.4	2,100	7.6	3.2	100
12/11/2014		7.82	3,100	2.5 J	280	2,700	13	3,700	10	5.5 J	170
SW-4/5/6/7											
11/20/2014		7.71	230	<5.5	10	160	26	670	11	4.9	400
11/20/2014	Duplicate	7.71	230	<5.5	9.0	190	27	700	12	5.0	410
12/2/2014		6.80	220	<5.2	79	830	8.9	1,300	7.5	2.9 J	96
12/11/2014		7.61	540	1.2 J	20	480 J	5.7	430	1.9 J	<15	91

Acronyms/Abbreviations:
J - concentration reported is an estimated value
mg/L - milligrams per liter
µg/L - micrograms per liter
µmhos/cm - microsiemens per centimeter
--- - not analyzed
<n - not detected above the reporting limit

Table 3. Waste Characterization Sample Results, United Heckathorn Superfund Site, Richmond, California

	Regulatory Thresholds			SW-4 and SW-5 Solid Waste	SW-4 and SW-5 Solid Waste Extract		SW-3, SW-6, and SW-7 Solid Waste
	Date			6/25/2014	6/25/2014		9/5/2014
	TTLC	TCLP	STLC	Result[a]	TCLP Result	STLC Result	Result[a]
Fish Toxicity							
96 Hour Acute Toxicity	-	-	-	PASS	-	-	-
Volatiles				µg/kg			µg/kg
Benzene	-	500	-	<5.0	-	-	-
Ethylbenzene	-	-	-	<5.0	-	-	-
Toluene	-	-	-	<5.0	-	-	-
Xylenes, total	-	-	-	<9.9	-	-	-
TPH				mg/kg			mg/kg
TPH-G	-	-	-	<0.250	-	-	-
TPH-D	-	-	-	770	-	-	-
TPH-MO	-	-	-	3,100	-	-	-
Pesticides				µg/kg			µg/kg
Aldrin	1,400	-	140	<1.9	-	-	<1.9
Chlordane	2,500	30	250	<39	-	-	<39
4,4-DDT	1,000[b]	-	100[b]	290	-	-	7.8
4,4-DDE	1,000[b]	-	100[b]	190	-	-	11
4,4-DDD	1,000[b]	-	100[b]	290	-	-	26
Total DDT	1,000[b]	-	100[b]	770	-	-	44.8
Dieldrin	8,000	-	800	25	-	-	<1.9
Endrin	200	20	20	<1.9	-	-	<1.9
Heptachlor	4,700	8	470	<1.9	-	-	<1.9
Methoxychlor	100,000	10000	10,000	<1.9	-	-	<1.9
Metals				mg/kg	mg/L		mg/kg
Antimony	500	NE	15	<1.8	-	-	<2.1
Arsenic	500	5.0	5.0	5.0	-	-	4.6
Barium	10,000	100	100	130	-	-	160
Beryllium	75	NE	0.75	<0.35	-	-	1.60
Cadmium	100	1.0	1.0	1.8	-	-	0.89
Chromium	2,500	5	5	44	-	-	26
Cobalt	8,000	NE	80	11	-	-	18
Copper	2,500	NE	25	88	-	-	28
Lead	1,000	5.0	5.0	**180**	<0.050	**8.2**	22
Mercury	20	0.2	0.2	0.59	-	-	0.11
Molybdenum	3,500	NE	350	5.1	-	-	<2.1
Nickel	2,000	NE	20	98	-	-	74
Selenium	100	1.0	1.0	<3.5	-	-	<4.3
Silver	500	5	5	<0.88	-	-	<1.1

Table 3. Waste Characterization Sample Results, United Heckathorn Superfund Site, Richmond, California

	Regulatory Thresholds			SW-4 and SW-5 Solid Waste	SW-4 and SW-5 Solid Waste Extract		SW-3, SW-6, and SW-7 Solid Waste
	Date			6/25/2014	6/25/2014		9/5/2014
	TTLC	TCLP	STLC	Result[a]	TCLP Result	STLC Result	Result[a]
Metals (cont.)				mg/kg	mg/L		mg/kg
Thallium	700	NE	7.0	<1.8	-	-	<2.1
Vanadium	2,400	NE	24	84	-	-	150
Zinc	5,000	NE	250	640	-	-	160

Notes:

Bold values represent waste constituent concentrations exceeding one or more of the toxicity threshold concentrations for the constituent.

[a] Analytical results provided are wet basis concentrations.

[b] The STLC and TTLC values of 100 and 1,000 µg/kg, respectively, are for total DDT (sum of DDT, DDE, and DDD concentrations).

Abbreviations:

4,4-DDD - 4,4-dichlorodiphenyldichloroethane
4,4-DDE - 4,4-dichlorodiphenldichloroethene
4,4-DDT - 4,4-dichlorophenyltrichloroethane
mg/kg - milligrams per kilogram
mg/L - milligrams per liter
NE - not established
STLC - Soluble Threshold Limit Concentration per Table II- List of Inorganic Persistant and Bioaccumulative Toxic Substances and their Soluble Threshold Limit Concentration (STLC) and Total Threshold Limit Concentration (TTLC) Values (Title 22, California Code of Regulations, §66261.24)
TCLP - Toxicity Characteristic Leaching Procedure maximum concentration for toxicity per Table 1-*Maximum Concentration of Contaminants for the Toxicity Characteristic* (Title 40 Code of Federal Regulations, §261.24)
TPH-D - total petroleum hydrocarbons as diesel
TPH-G - total petroleum hydrocarbons as gasoline
TPH-MO - total petroleum hydrocarbon as motor oil
TTLC - Total Threshold Limit Concentration per Table II- List of Inorganic Persistant and Bioaccumulative Toxic Substances and their Soluble Threshold Limit Concentration (STLC) and Total Threshold Limit Concentration (TTLC) Values (Title 22, California Code of Regulations, §66261.24)
µg/kg - micrograms per kilogram
USEPA - United States Environmental Protection Agency
--- - not analyzed
<n - not detected above the reporting limit

Table 4. Proposed Site Work for 2015-2016, United Heckathorn Superfund Site, Richmond, California

Aspect	Description	Anticipated Completion Date
General	Implement all activities (i.e., cap maintenance, storm water monitoring, interceptor cleanout) described in the O&M Plan.[1]	Continuously
	Submit report of O&M performed for the period of July 1, 2015 to June 30, 2016.	On/around July 15, 2016
Concrete Cap	Perform 2015-2016 annual inspection of the cap under oversight of a registered engineer.	June 1, 2016
	Monitor deteriorated concrete in the southern portion of the eastern swale of the Main Terminal identified in Photos 17 and 18 (Appendix A); replace affected sections should evidence of underlying soil be observed.	Continuously
	Monitor identified cracks, seals, and joints for signs of propagation and/or degradation throughout upland capping system.	Continuously
Gravel Cover	Add gravel to the interceptor SW-4 and SW-5 areas identified in Photos 7 and 11 (Appendix A) to ensure proper coverage.	October 1, 2015
	Monitor the gravel cover throughout the Upland Area for signs of thinning or ground exposure.	Continuously
Storm Water System	Install storm water treatment at the SW-5 discharge location to treat combined storm water pumped from interceptors SW-3, SW-4, SW-5, SW-6, and SW-7 using flocculation, settling, and filtration methods.	October 1, 2015
	Continue developing trend graphs showing temporary and spatial distribution of detected pesticides for the preceding five years.	July 15, 2016

[1] *Revised Draft Operations and Mainteannce Plan, Upland Capping System, Former United Heckathorn Site,* PES Environmental, Inc., March 1999.

APPENDIX A

UPLAND CAPPING SYSTEM INSPECTION PHOTOGRAPHS

Appendix A
Upland Capping System Inspection Photographs
2014-2015 Annual Report, United Heckathorn Superfund Site
Richmond, California

Photo 1 – Looking south along western alley of secondary storage area: surficial cracking in SW-3 area, with sealed crack in foreground.

Photo 2 – Looking south along western alley of secondary storage area: sealed surficial cracks at concrete seam.

Photo 3 – Looking west across western alley of secondary storage area: surficial cracking in SW-3 area.

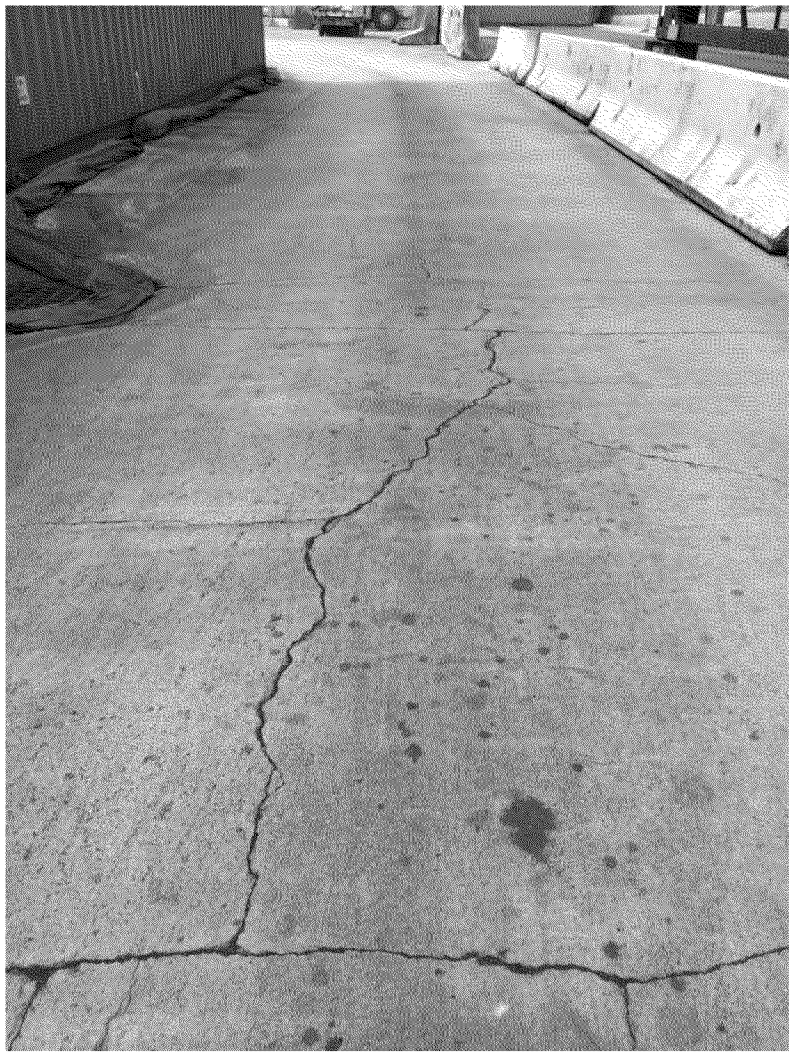

Photo 4 – Looking south along western alley of secondary storage area: surficial cracking near drain inlet 3DI-11.

Photo 5 - Looking south toward drain inlet 3DI-11A: areas of surficial cracking and concrete seam.

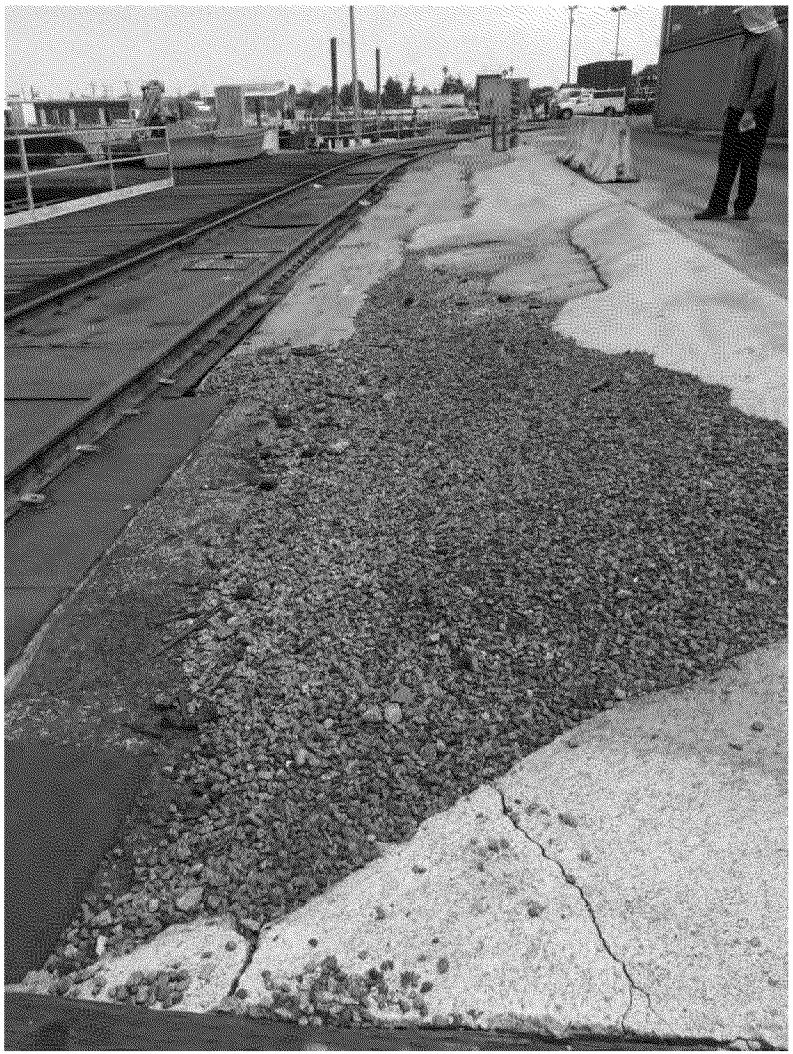

Photo 6 – Looking north, surficial cracks and areas with sparse gravel coverage; area will be modified to have combination of gravel and concrete cap.

Photo 7 – Looking east from corner of interceptor SW-4: crack extending east with sealant added in December 2013.

Photo 8 – Looking southwest toward 4DI-19: surficial cracks. sealant added in December 2013.

Photo 9 - Looking east: surficial cracks.

Photo 10 - Looking north: gravel cover.

Photo 11 – Looking east: surficial cracks.

Photo 12 – Looking west toward Municipal Outfall: seams and surficial cracks.

Photo 13 - Northwest corner of site, looking south near interceptor SW-7: minor surface cracks noted.

Photo 14 - Northeast corner of site: minor surface cracks.

Photo 15- Area southeast of interceptor SW-6: minor surface cracks.

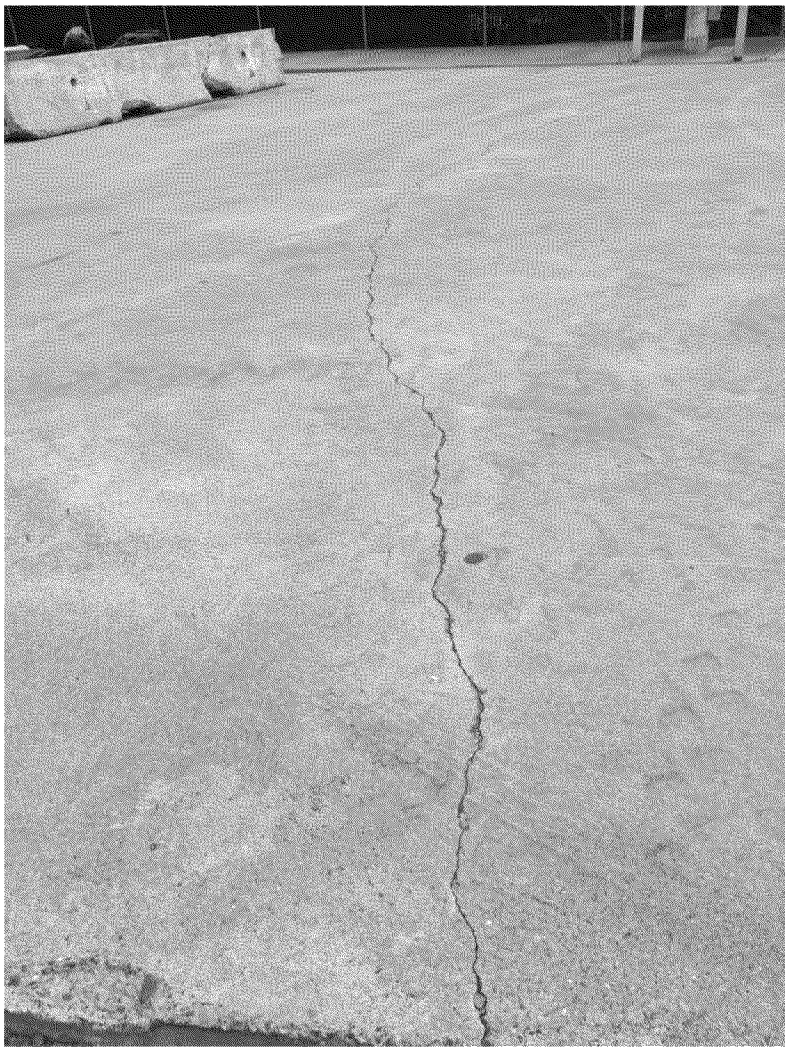

Photo 16 – Area southeast of interceptor SW-6: minor surface cracks.

Photo 17 – Looking east, north of 5DI-14A: areas of minor concrete deterioration.

Photo 18 – Looking east, north of 5DI-14A: areas of minor concrete deterioration.

Weiss Associates

APPENDIX B

2014-2015 ANNUAL STORM WATER MONITORING REPORT

LEVIN RICHMOND TERMINAL CORPORTION
402 WRIGHT AVENUE
RICHMOND, CA 94804
(510) 232-4422 FAX (510) 236-1827

June 30, 2015

Regional Water Quality Control Board–San Francisco Bay Region
1515 Clay Street, Suite 1400
Oakland, California 94612

RE: *2014-2015 Annual Report for Storm Water Discharges Associated with Industrial Activities*
Levin Richmond Terminal Corporation
WDID No.: 2 07I002394

Dear Mr. Pham:

Enclosed please find the *2014-2015 Annual Report for Storm Water Discharges Associated with Industrial Activities* presenting storm water monitoring data and observations related to storm water compliance activities at the Levin Richmond Terminal Facility, located at 402 Wright Avenue, Richmond, California. Storm water compliance activities were conducted under the requirements of the *Waste Discharge Requirements for Discharges of Storm Water Associated with Industrial Activities Excluding Construction Activities* specified in the State Water Resources Control Board (SWRCB) Water Quality Order No. 97-03-DWQ, National Pollutant Discharge Elimination System (NPDES) General Permit No. CAS000001 (*Industrial General Permit*).

Please feel free to contact me if you have any questions or concerns with the attached report.

Sincerely,

Gary Levin

Gary Levin
Chief Executive Officer
(510) 307-4091

Attachment A. 2014-2015 Annual Report for Storm Water Discharges Associated with Industrial Activities
Attachment B. 2014-2015 Annual Report for Storm Water Discharges Associated with Industrial Activities - Additional Explanations
Attachment C. Analytical Data
Table 1. 2014-2015 Annual Storm Water Sampling Data for General Parameters and Metals
Table 2. 2014-2015 Annual Storm Water Sampling Data for Detected Pesticides
2014-2015 Laboratory Analytical Reports

ATTACHMENT A

2014-2015 ANNUAL REPORT FOR STORM WATER DISCHARGES
ASSOCIATED WITH INDUSTRIAL ACTIVITIES

2014-2015 ANNUAL REPORT FOR STORM WATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITIES

for

Levin Richmond Terminal Corporation
WDID No.: 2 07I002394

Prepared for

Regional Water Quality Control Board – San Francisco Bay Region
1515 Clay Street, Suite 1400
Oakland, California 94612

June 30, 2015

STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD
2014-2015 ANNUAL REPORT
FOR STORM WATER DISCHARGES ASSOCIATED
WITH INDUSTRIAL ACTIVITIES

Reporting Period July 1, 20□4 through June 30, 20□5

An Annual Report is required to be submitted to your local Regional Water Quality Control Board (Regional Board) by July 1 of each year. This document must be certified and signed, under penalty of perjury, by the appropriate official of your company. Many of the Annual Report questions require an explanation. Please provide explanations on a separate sheet as an attachment. **Retain a copy of the completed Annual Report for your records.**

Please circle or highlight any information contained in Items A, B, and C below that is new or revised so we can update our records. Please remember that a Notice of Termination and new Notice of Intent are required whenever a facility operation is relocated or changes ownership.

If you have any questions, please contact your Regional Board Industrial Storm Water Permit Contact. The names, telephone numbers, and e-mail addresses of the Regional Board contacts, as well as the Regional Board Offices addresses are indicated below.

REGIONAL BOARD INFORMATION:

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GENERAL INFORMATION

A. Facility Information:

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[illegible]
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WDID NO: 2 07I002394

SIC Code(s):

4491 [illegible]

B. Facility Operator Information:

[illegible]
[illegible]
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C. Facility Billing Information:

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ATTACHMENT SUMMARY

Answer the questions below to help you determine what should be attached to this annual report. Answer NA (Not Applicable) to questions 2-4 if you are not required to provide those attachments.

1. Have you attached Forms 1,2,3,4, and 5 or their equivalent?	☒ YES (Mandatory)		
2. If you conducted sampling and analysis, have you attached the laboratory analytical reports?	☒ YES	☐ NO	☐ NA
3. If you checked box II, III, IV, or V in item D.2 of this Annual Report, have you attached the first page of the appropriate certifications?	☐ YES	☐ NO	☒ NA
4. Have you attached an explanation for each "NO" answer in items E.1, E.2, E.5-E.7, E.9, E.10.c, F.1.b, F.2.a, F.2.c, G.1, H.1-H.7, or J?	☒ YES	☐ NO	☐ NA

ANNUAL REPORT CERTIFICATION

I am duly authorized to sign reports required by the INDUSTRIAL ACTIVITIES STORM WATER GENERAL PERMIT (see Standard Provision C.9) and I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those person directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Printed Name: GARY LEVIN

Signature: Gary Levin Date: 6/30/2015

Title: CEO

2014-2015

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[illegible] Mary Cunningham [illegible] Senior Staff Engineer [illegible]

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TS1-E	11/20/14 [illegible] 2:15 [illegible]	1:00 [illegible]	7.82	12	1,000	< 1.4	-	160	310	5.5	240
SW-3	11/20/14 [illegible] 3:35 [illegible]	3:30 [illegible]	6.92	190	3,500	< 1.6	-	1,300	2,600	9.6 J	210
SW-4/5/6/7	11/20/14 [illegible] 2:45 [illegible]	1:30** [illegible]	7.71	10	230	< 1.5	-	160	670	11	400
SW-4/5/6/7 Duplicate	11/20/14 [illegible] 2:50 [illegible]	1:30** [illegible]	7.71	9.0	230	< 1.5	-	190	700	12	410
[illegible]			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	ug/L	ug/L	ug/L	ug/L
[illegible]			-	0.83 - 9.1	1.0	1.4 - 1.6	-	2.4 - 24	5.7 - 57	0.057 - 0.57	0.4 - 4.0
[illegible]			Portable field meter	SM2540D	SM2510B	1664A	-	EPA 200.8	EPA 200.8	EPA 200.8	EPA 200.8
[illegible]			Self	Test America	Test America	Test America		Test America	Test America	Test America	Test America

[illegible] [illegible] [illegible] [illegible]

*Additional parameters not required by the IGP, including copper and nickel (all discharge locations) and pesticides (locations SW-3 and SW-4/5/6/7), are included in Attachment C.

**Estimate; exact discharge start time unknown.

2014-2015

[illegible]

[illegible]

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- [illegible]
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			[illegible]								
			[illegible]				[illegible]				
			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]	unknown	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	ug/L	ug/L	ug/L	ug/L	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.057	[illegible]	
[illegible]	Portable field meter	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	

[illegible] [illegible] [illegible] [illegible]

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2014-2015

B

SECOND

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[illegible] _____ [illegible] _____ [illegible] _____

[illegible]	[illegible]	[illegible]	[illegible] Second [illegible]					[illegible]*				
			[illegible]					[illegible]				
			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]	[illegible] ☐ [illegible] ☐ [illegible] ☒ [illegible]	☐ [illegible] ☐ [illegible] early AM**	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]	[illegible] ☒ [illegible] ☐ [illegible]	☐ [illegible] ☐ [illegible] [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
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[illegible]			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.034	[illegible]	
[illegible]			Portable field meter	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]			[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	

[illegible] [illegible] [illegible] [illegible]

[illegible]

[illegible]

2014-2015

B

SECOND

- [illegible]
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[illegible]	[illegible]	[illegible]	[illegible] Second [illegible]									
			[illegible]					[illegible]*				
			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]	[illegible] ☒ [illegible]	[illegible] early AM**	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]	[illegible] ☒ [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
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[illegible]			Portable field meter	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]			[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	

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2014-2015

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THIRD STORM EVENT

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[illegible] [illegible] [illegible]

[illegible]	[illegible]	[illegible]	[illegible] For Third Storm Event									
			[illegible]					OTHER PARAMETERS*				
			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]	[illegible] ☒ [illegible] [illegible] ☐ [illegible]	☒ [illegible] [illegible] ☐ [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
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[illegible]			9040B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]			[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	

[illegible] [illegible] [illegible] TOC - Total Organic Carbon J - estimated concentration

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2014-2015

THIRD STORM EVENT

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[illegible]	[illegible]	[illegible]	For Third Storm Event									
			[illegible]					OTHER PARAMETERS*				
			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
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[illegible]			9040B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]			[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	

[illegible] [illegible] [illegible] TOC - Total Organic Carbon J - estimated concentration

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2014-2015

FOURTH STORM EVENT

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[illegible]	[illegible]	[illegible]	For Fourth Storm Event									
			[illegible]					OTHER PARAMETERS*				
			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
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[illegible]			9040B	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]			[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	

[illegible] [illegible] [illegible] TOC - Total Organic Carbon J - estimated concentration

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2014-2015

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[illegible] 8:40 ☒ [illegible] ☐ [illegible]	[illegible] [illegible] ☐ [illegible] [illegible] ☐ [illegible] [illegible] ☐	[illegible] ☐ [illegible] ☒ [illegible] [illegible] ☐ [illegible] ☒ [illegible]
[illegible] 12/10/2014 [illegible] ☒ [illegible] ☐ [illegible]	[illegible] [illegible] ☐ [illegible] [illegible] ☐ [illegible] [illegible] ☐	[illegible] ☐ [illegible] ☒ [illegible] [illegible] ☐ [illegible] ☒ [illegible]
[illegible] 2/25/2015 1:30 ☐ [illegible] ☒ [illegible]	[illegible] [illegible] ☐ [illegible] [illegible] ☐ [illegible] [illegible] ☐	[illegible] ☐ [illegible] ☒ [illegible] [illegible] ☐ [illegible] ☒ [illegible]
[illegible] [illegible] ☒ [illegible] ☐ [illegible]	[illegible] [illegible] ☐ [illegible] [illegible] ☐ [illegible] [illegible] ☐	[illegible] ☐ [illegible] ☒ [illegible] [illegible] ☐ [illegible] ☒ [illegible]

2014-2015

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[illegible]	[illegible]	[illegible]	[illegible]		[illegible]
			[illegible]	[illegible]	
[illegible] 8:45 ☒ [illegible] ☐ [illegible]	[illegible]				
12/10/2014 9:40 ☒ [illegible] ☐ [illegible]	[illegible]				
2/25/2015 1:30 ☐ [illegible] ☒ [illegible]	[illegible]				
[illegible] [illegible] ☒ [illegible] ☐ [illegible]	[illegible]				

2014 - 2015
ANNUAL REPORT
FORM 4 - MONTHLY VISUAL OBSERVATIONS OF STORM WATER DISCHARGES

- Storm water discharge visual observations are required for at least one storm event per month between October 1 and May 31.
- Visual observations must be conducted during the first hour of discharge at all discharge locations.
- Discharges of temporarily stored or contained storm water must be observed at the time of discharge.
- Indicate "None" in the first column of this form if you did not conduct a monthly visual observation.
- Make additional copies of this form as necessary.
- Until a monthly visual observation is made, record any eligible storm events that do not result in a storm water discharge and note the date, time, name, and title of who observed there was no storm water discharge.

		Drainage Location Description:	SW-1	SW-2	TS1-E	SW-3	SW-4	SW-5	SW-6	SW-7	SW-4/5/6/7	SW-11	SW-12
Observation Date:	October 31, 2014	**Observation Time:**	--	--	--	--	--	--	--	--	--	--	--
Observer's Name:	Mary Cunningham	**Time Discharge Began:**	No discharge	No discharge	No discharge	No discharge	No discharge	No discharge	No discharge	No discharge	No discharge	No discharge	No discharge
Title:	Senior Staff Engineer	**Approximate storm start date and time:**	No qualified storm event in October 2014.										
Signature:		**Were Pollutants Observed (if yes, complete reverse side):**	No	No	No	No	No	No	No	No	No	No	No
Observations Date:	November 20, 2014	**Observation Time:**	--	--	1:00 PM	2:30 PM	--	--	--	--	2:45 PM	3:00 PM	4:50 PM
Observer's Name:	Mary Cunningham	**Time Discharge Began:**	No discharge (1)	No discharge (1)	1:55 PM	2:35 PM	No discharge (2)	No discharge (2)	No discharge (2)	No discharge (2)	1:30 PM	1:30 PM	Unknown (3)
Title:	Senior Staff Engineer	**Approximate storm start date and time:**	Evening of November 19, 2014.										
Signature:		**Were Pollutants Observed (if yes, complete reverse side):**	No (1)	No (1)	Yes	Yes	No (2)	No (2)	No (2)	No (2)	Yes	Yes	Yes
Observations Date:	December 2, 2014	**Observation Time:**	--	--	12:20 PM	11:40 AM	--	--	--	--	11:30 AM	10:55 AM	1:00 PM
Observer's Name:	Mary Cunningham	**Time Discharge Began:**	No discharge (1)	No discharge (1)	Early AM, unknown (4)	Early AM, unknown (4)	No discharge (2)	No discharge (2)	No discharge (2)	No discharge (2)	Early AM, unknown (4)	Early AM, unknown (4)	Early AM, unknown (4)
Title:	Senior Staff Engineer	**Approximate storm start date and time:**	Approximately 2 AM on December 2, 2014.										
Signature:		**Were Pollutants Observed (if yes, complete reverse side):**	No (1)	No (1)	Yes	Yes	No (2)	No (2)	No (2)	No (2)	Yes	Yes	Yes
Observations Date:	December 11, 2014	**Observation Time:**	--	--	9:45 AM	8:40 AM	--	--	--	--	8:46 AM	8:55 AM	9:10 AM
Observer's Name:	Mary Cunningham	**Time Discharge Began:**	No discharge (1)	No discharge (1)	8:50 AM	8:40 AM	No discharge (2)	No discharge (2)	No discharge (2)	No discharge (2)	8:40 AM	8:40 AM	9:00 AM
Title:	Senior Staff Engineer	**Approximate storm start date and time:**	Early morning of December 11, 2014.										
Signature:		**Were Pollutants Observed (if yes, complete reverse side):**	No (1)	No (1)	Yes	Yes	No (2)	No (2)	No (2)	No (2)	Yes	Yes	Yes
Observations Date:	January 31, 2015	**Observation Time:**	--	--	--	--	--	--	--	--	--	--	--
Observer's Name:	Mary Cunningham	**Time Discharge Began:**	No discharge	No discharge	No discharge	No discharge	No discharge	No discharge	No discharge	No discharge	No discharge	No discharge	No discharge
Title:	Senior Staff Engineer	**Approximate storm start date and time:**	No qualified storm event in January 2015.										
Signature:		**Were Pollutants Observed (if yes, complete reverse side):**	No	No	No	No	No	No	No	No	No	No	No
Observations Date:	February 6, 2015	**Observation Time:**	--	--	1:50 PM	--	--	--	--	--	--	2:15 PM	2:05 PM
Observer's Name:	Mary Cunningham	**Time Discharge Began:**	No discharge (1)	No discharge (1)	1:45 PM	No discharge	No discharge (2)	No discharge (2)	No discharge (2)	No discharge (2)	No discharge	2:13 PM	Unknown (3)
Title:	Senior Staff Engineer	**Approximate storm start date and time:**	Early morning of February 6, 2015.										
Signature:		**Were Pollutants Observed (if yes, complete reverse side):**	No (1)	No (1)	Yes	No	No (2)	No (2)	No (2)	No (2)	No	Yes	Yes
Observations Date:	March 31, 2015	**Observation Time:**	--	--	--	--	--	--	--	--	--	--	--
Observer's Name:	Mary Cunningham	**Time Discharge Began:**	No discharge	No discharge	No discharge	No discharge	No discharge	No discharge	No discharge	No discharge	No discharge	No discharge	No discharge
Title:	Senior Staff Engineer	**Approximate storm start date and time:**	No qualified storm event in March 2015.										
Signature:		**Were Pollutants Observed (if yes, complete reverse side):**	No	No	No	No	No	No	No	No	No	No	No

Observations Date:	April 7, 2015	**Observation Time:**	--	--	9:10 AM	--	--	--	--	--	9:30 AM	9:45 AM	--
Observer's Name:	Mary Cunningham	**Time Discharge Began:**	No discharge(1)	No discharge(1)	6:40 AM (5)	No discharge(6)	No discharge(2)	No discharge(2)	No discharge(2)	No discharge(2)	9:30 AM (6,7)	9:45 AM	No discharge
Title:	Senior Staff Engineer	**Approximate storm start date and time:**	Approximately 1 AM on April 7, 2015.										
Signature:		**Were Pollutants Observed (if yes, complete reverse side):**	No	No	Yes	No	No	No	No	No	Yes	Yes	No
Observations Date:	May 29, 2015	**Observation Time:**	--	--	--	--	--	--	--	--	--	--	--
Observer's Name:	Scott Bourne	**Time Discharge Began:**	No discharge	No discharge	No discharge	No discharge	No discharge	No discharge	No discharge	No discharge	No discharge	No discharge	No discharge
Title:	Principal Engineer	**Approximate storm start date and time:**	No qualified storm event in May 2015.										
Signature:		**Were Pollutants Observed (if yes, complete reverse side):**	No	No	No	No	No	No	No	No	No	No	No

(1) Storm water from interceptors SW-1 and SW-2 routed to treatment system. See TS1-E for discharge from treatment system.
(2) Storm water from interceptors SW-4, SW-5, SW-6, and SW-7 combined in sedimentation tank at SW-5 prior to discharge; see SW-4/5/6/7 for discharge information.
(3) Sample collected from storage tank prior to outflow. Sample represents discharge.
(4) Discharge began prior to business hours on December 2, 2014.
(5) Exact start of discharge unknown. Operator started TS-1 treatment system at 0640 on 4/7/15.
(6) Beginning in April 2015, discharge from interceptor SW-3 is routed to the combined sedimentation tank at SW-5. Discharge from the aboveground tank at SW-5 represents the combined discharge from SW-3 through SW-7.
(7) The discharge valve from interceptor SW-5 was found to be leaking at 0920 on 4/7/15; exact start time of discharge unknown.

2014 - 2015
ANNUAL REPORT
FORM 4 (continued) - MONTHLY VISUAL OBSERVATIONS OF STORM WATER DISCHARGES

		Drainage Location Description:	Describe Storm Water Discharge Characteristics Indicate whether storm water discharge is clear, cloudy, or discolored; causing staining, containing floating objects or an oil sheen, has odors, etc.	Identify and Describe Source(s) of Pollutants	Describe any revised or new BMPs and their date of implementation
Observation Date and Time:	November 20, 2014, 1:00 PM	TS1-E	Discharge was tan with light turbidity. No solids, staining, odor, or sheen observed.	Not identified	Addition of biopolymer flocculant at treatment system TS-1 was implemented for the 2014-2015 storm season. The following additional BMPs were implemented across the site: -Updated site sweeping plan on/around 10/15/14. -Installed and test global positioning system for sweepers on/around 10/15/14. -Installed and test articulating head on single sweeping system to improve sweeping on rail track on/around 10/1/14. -Installed second covered, telescoping conveyor with drip pans on/around 10/1/14. -Established track out prevention zone and facility exits including rumble strip and delineated area on/around 10/1/14. -Installed weather station with alarm to track precipitation, wind speed and other parameters on/around 12/31/14.
Observation Date and Time:	November 20, 2014, 2:30 PM	SW-3	Discharge was dark gray/black, highly turbid, with some suspended solids. No staining, odor, or sheen observed.	Bulk product storage in the SW-3 catchment area.	Construction of treatment system TS-2 anticipated before 2015-2016 rainy season.
Observation Date and Time:	November 20, 2014, 2:45 PM	SW-4/5/6/7	Discharge was light gray/brown, lightly turbid, and contained minimal suspended solids. No staining, odor, or sheen observed.	Not identified	Storm water from catchment areas SW-4, SW-6, and SW-7 pumped to interceptor SW-5 beginning in the 2014-2015 storm season. Combined storm water is pumped to sedimentation tank for increased solids removal prior to discharge. Construction of treatment system TS-2 anticipated before 2015-2016 rainy season.
Observation Date and Time:	November 20, 2014, 3:00 PM	SW-11	Discharge was gray with minor suspended solids. No staining, odor, sheen, or significant turbidity observed.	Not identified	
Observation Date and Time:	November 20, 2014, 4:50 PM	SW-12	Discharge was gray/brown with minor suspended solids. No staining, odor, sheen, or significant turbidity observed.	Not identified	Construction of treatment system TS-3 anticipated before 2015-2016 rainy season.
Observation Date and Time:	December 2, 2014, 12:20 PM	TS1-E	Discharge was tan with some turbidity. No solids, staining, odor, or sheen observed.	Not identified	
Observation Date and Time:	December 2, 2014, 11:40 AM	SW-3	Discharge was dark gray and turbid. No solids, staining, odor, or sheen observed.	Bulk product storage/handling in the SW-3 catchment area.	Construction of treatment system TS-2 anticipated before 2015-2016 rainy season.
Observation Date and Time:	December 2, 2014, 11:30 AM	SW-4/5/6/7	Discharge was gray, lightly turbid, and contained minimal suspended solids. No staining, odor, or sheen observed.	Not identified	Construction of treatment system TS-2 anticipated before 2015-2016 rainy season.
Observation Date and Time:	December 2, 2014, 10:55 AM	SW-11	Discharge was clear/lightly gray with some turbidity. No solids, staining, odor, sheen, or significant turbidity observed.	Not identified	
Observation Date and Time:	December 2, 2014, 1:00 PM	SW-12	Discharge was clear with no noticeable turbidity. No solids, staining, odor, sheen, or significant turbidity observed.	Not identified	Construction of treatment system TS-3 anticipated before 2015-2016 rainy season.
Observation Date and Time:	December 11, 2014, 9:45 AM	TS1-E	Discharge was light tan with no noticeable turbidity. No solids, staining, odor, or sheen observed.	Not identified	
Observation Date and Time:	December 11, 2014, 8:40 AM	SW-3	Discharge was tan/gray and moderately turbid. No solids, staining, odor, or sheen observed.	Not identified	Construction of treatment system TS-2 anticipated before 2015-2016 rainy season.
Observation Date and Time:	December 11, 2014, 8:46 AM	SW-4/5/6/7	Discharge was clear/light tan with no noticeable turbidity. No solids, staining, odor, or sheen observed.	Not identified	Construction of treatment system TS-2 anticipated before 2015-2016 rainy season.

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FORM 4 (continued) - MONTHLY VISUAL OBSERVATIONS OF STORM WATER DISCHARGES

		Drainage Location Description:	Describe Storm Water Discharge Characteristics Indicate whether storm water discharge is clear, cloudy, or discolored; causing staining, containing floating objects or an oil sheen, has odors, etc.	Identify and Describe Source(s) of Pollutants	Describe any revised or new BMPs and their date of implementation
Observation Date and Time:	December 11, 2014, 8:55 AM	SW-11	Discharge was tan/gray with some turbidity. No solids, staining, odor, or sheen observed.	Not identified	
Observation Date and Time:	December 11, 2014, 9:10 AM	SW-12	Discharge was gray with medium turbidity. No solids, staining, odor, or sheen observed.	Not identified	Construction of treatment system TS-3 anticipated before 2015-2016 rainy season.
Observation Date and Time:	February 6, 2015, 1:50 PM	TS1-E	Discharge was very clear. No color, turbidity, solids, staining, odor, or sheen observed.	Not identified	
Observation Date and Time:	February 6, 2015, 2:15 PM	SW-11	Discharge was very clear. No color, turbidity, solids, staining, odor, or sheen observed.	Not identified	
Observation Date and Time:	February 6, 2015, 2:05 PM	SW-12	Discharge was gray with light turbidity. No solids, staining, odor, or sheen was observed.	Not identified	Construction of treatment system TS-3 anticipated before 2015-2016 rainy season.
Observation Date and Time:	April 7, 2015, 9:10 AM	TS1-E	Discharge was gray/tan with slight turbidity. No solids, staining, odor, or sheen was observed.	Not identified	
Observation Date and Time:	April 7, 2015, 9:30 AM	SW-3/4/5/6/7	Discharge was gray/brown and cloudy/turbid. A slight petroleum odor was noted. No solids, staining, or sheen was observed.	Not identified	Storm water from catchment area SW-3 was routed to the aboveground sedimentation tank at SW-5 in April 2015. Storm water from interceptors SW-3 through SW-7 is combined in the sedimentation tank for increased solids removal prior to discharge. Construction of treatment system TS-2 anticipated before 2015-2016 rainy season. Discharge valve on SW-5 is routinely checked and repaired as needed.
Observation Date and Time:	April 7, 2015, 9:450 AM	SW-11	Discharge was dark gray and almost opaque with turbidity. A slight petroleum odor was noted. No solids, staining, or sheen was observed.	Green coke in South Parr Yard	

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ATTACHMENT B

ADDITIONAL EXPLANATIONS

2014-2015 Annual Report
Storm Water Discharges Associated with Industrial Activities
Levin Richmond Terminal Corporation
Additional Explanations

E.5. During each of the four storm events, samples were collected from each location that produced discharge. As a result, only a subset of the potential discharge locations were sampled during each event.

E.6. Samples were collected during the first hour of discharge during two of the four qualified storm events sampled, on December 11, 2014 and February 6, 2015. Exact discharge start times were unknown during the first qualified storm event of the year (November 20, 2014); samples were collected between approximately five minutes and an hour and half after discharge at each location. During the storm event on December 2, 2014, samples were collected after the first hour of discharge.

G.1. No qualified storm events occurred during scheduled work hours in October 2014, January 2015, March 2015, April 2015 and May 2015.

ATTACHMENT C

ANALYTICAL DATA

Table 1. 2014-2015 Annual Storm Water Sampling Data for General Parameters and Metals

Discharge Location	Notes	pH	Specific Conductance	Total Oil and Grease	Total Suspended Solids	Aluminum	Copper	Iron	Lead	Nickel	Zinc	Residual Chitosan[d,e]
		-	µmhos/cm	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L
TS1-I [a]												
11/20/2014		8.95	--	< 4.8	210	2,700	50	7,900	100	14	790	--
12/2/2014		6.87	160	3.8 J	230	1,600	11	3,000	19	4.5	200	--
12/11/2014		7.43	---	1.0 J	120	3,200	9.0	2,200	10	3.7 J	130	--
2/6/2015		8.31	---	< 5.4	550	4,600	41	7,700	55	18	820	--
TS1-E												
11/20/2014		7.82	1,000	< 4.9	12	160	7.5	310	5.5	2.3	240	< 0.1
12/2/2014		6.85	200	< 5.5	14	140	0.89 J	170	0.73	0.5 J	23	< 0.1
12/11/2014		7.37	170	1.8 J	24	600	2.8 J	350	2.0	< 15	60	< 0.1
2/6/2015		7.70	1,500	< 5.2	8.4	230	2.3	180	1.4	1.6 J	92	< 0.1
SW-3												
11/20/2014		6.92	3,500	< 5.6	190	1,300	14 J	2,600	9.6 J	6.5 J	210	--
12/2/2014		7.31	890	< 6.6	120	950	7.6	2,100	7.7	3.3	100	--
12/2/2014	Duplicate	7.31	900	< 5.2	120	1,000	7.4	2,100	7.6	3.2	100	--
12/11/2014		7.82	3,100	2.5 J	280	2,700	13	3,700	10	5.5 J	170	--
SW-4/5/6/7												
11/20/2014		7.71	230	< 5.5	10	160	26	670	11	4.9	400	--
11/20/2014	Duplicate	7.71	230	< 5.5	9.0	190	27	700	12	5.0	410	--
12/2/2014		6.80	220	< 5.2	79	830	8.9	1,300	7.5	2.9 J	96	--
12/11/2014		7.61	540	1.2 J	20	480 J	5.7	430	1.9 J	< 15	91	--
S PARR SW-11												
11/20/2014		6.78	8,500	< 5.7	30	170	5.1	410	3.0	4.4	65	--
12/2/2014		6.71	2,400	< 5.4	17	130	2.2	250	1.2	2.2 J	27	--
12/11/2014		7.65	20,000	1.2 J	39	240 J	5.5	540	1.6 J	5.6 J	84	--
12/11/2014	Duplicate	7.66	20,000	< 5.3	39	250 J	5.2	530	1.8 J	6.0 J	87	--
2/6/2015		7.54	52,000	< 5.3	10	< 100	2.9	230	0.27 J	4.7	210	--
N PARR SW-12												
11/20/2014		8.01	160	< 5.6	12	710	27	2,300	13	12	160	--
12/2/2014		7.49	76	< 5.1	23	580	9.1	1,300	6.6	6.6	75	--
12/11/2014		7.62	69	1.3 J	36	840	11	1,700	10	6.0 J	110	--
2/6/2015		7.22	1,100	< 5.2	55	1,900	25	3,600	15	25	240	--
SHEET-1[b]												
12/11/2014		---	---	---	79	---	---	---	---	---	---	--
SHEET-2[c]												
12/2/2014		7.88	---	---	2.1	---	---	---	---	---	---	--
12/11/2014		---	---	---	51	---	---	---	---	---	---	--

Notes:

[a] TS1-I is the combined influent from interceptors SW-1 and SW-2 and does not represent discharge. It is used to evaluate TS-1 effectiveness.

[b] SHEET-1 is a sheet flow sample collected between the Track Out Prevention Zone at the Main Yard entrance gate and the public right-of-way.

[c] SHEET-2 is a sheet flow sample collected between the Track Out Prevention Zone at the South Parr Yard entrance gate and the public right-of-way.

[d] Residual chitosan field tested using StormKlear HaloSource HS-SOP-5051-02 colorimetric method unless otherwise noted.

[e] Residual chitosan result verified by CEL Analytical of San Francisco, CA using StormKlear HaloSource HS-SOP-5051-02 method.

Acronyms/Abbreviations:

--- = not analyzed

< *n* =not detected above the reporting limit

J = concentration reported is an estimated value

mg/L = milligrams per liter

Table 2. 2014-2015 Annual Storm Water Sampling Data for Pesticides

	Notes	4,4'-DDD	4,4'-DDE	4,4'-DDT	Aldrin	alpha-BHC	alpha-Chlordane	beta-BHC	Chlordane	delta-BHC	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulfate	Endrin	Endrin aldehyde	gamma-BHC (Lindane)	gamma-Chlordane	Heptachlor	Heptachlor epoxide	Methoxychlor	Toxaphene
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
SW-3																						
11/20/2014		< 0.0019	< 0.0019	< 0.0019	< 0.0019	< 0.096	< 0.0019	< 0.096	< 0.96	< 0.096	< 0.0019	< 0.096	< 0.096	< 0.096	< 0.0019	< 0.096	< 0.0019	< 0.0019	**0.0016**	< 0.0019	< 0.096	< 0.024
12/2/2014		**0.0028**	**0.014**	**0.019**	< 0.0020	< 0.097	< 0.0020	< 0.097	< 0.97	< 0.097	< 0.0020	< 0.097	< 0.097	< 0.097	< 0.0020	< 0.097	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.097	< 0.025
12/2/2014	Duplicate	**0.0025**	**0.014**	**0.019**	< 0.0019	< 0.097	< 0.0019	< 0.097	< 0.97	< 0.097	< 0.0019	< 0.097	< 0.097	< 0.097	< 0.0019	< 0.097	< 0.0019	< 0.0019	< 0.0019	< 0.0019	< 0.097	< 0.024
12/11/2014		**0.0023**	< 0.0022	**0.039**	< 0.0022	< 0.095	< 0.0022	< 0.095	< 0.95	< 0.095	< 0.0022	**0.030**	< 0.095	< 0.095	< 0.0022	< 0.095	< 0.0022	< 0.0022	< 0.0022	< 0.0022	< 0.095	< 0.027
SW-4/5/6/7																						
11/20/2014		< 0.0019	< 0.0019	**0.020**	< 0.0019	< 0.096	< 0.0019	< 0.096	< 0.96	< 0.096	< 0.0019	**0.042**	< 0.096	< 0.096	**0.011**	< 0.096	< 0.0019	< 0.0019	< 0.0019	< 0.0019	< 0.096	< 0.024
11/20/2014	Duplicate	< 0.0019	< 0.0019	**0.022**	< 0.0019	< 0.10	< 0.0019	< 0.10	< 1.0	< 0.10	< 0.0019	**0.039**	< 0.10	< 0.10	**0.012**	< 0.10	< 0.0019	< 0.0019	< 0.0019	< 0.0019	< 0.10	< 0.024
12/2/2014		< 0.0019	< 0.0019	**0.0035**	< 0.0019	< 0.096	< 0.0019	< 0.096	< 0.96	< 0.096	< 0.0019	< 0.096	< 0.096	< 0.096	< 0.0019	< 0.096	< 0.0019	< 0.0019	< 0.0019	< 0.0019	< 0.096	< 0.024
12/11/2014		**0.0033**	< 0.0019	**0.0049**	< 0.0019	< 0.095	< 0.0019	< 0.095	< 0.95	< 0.095	< 0.0019	< 0.095	< 0.095	< 0.095	< 0.0019	< 0.095	< 0.0019	< 0.0019	< 0.0019	< 0.0019	< 0.095	< 0.024

Notes:
Detected concentrations of pesticides are displayed in **bold**.

Acronyms/Abbreviations:
J = concentration reported is an estimated value
TPH = total petroleum hydrocarbons
< *n* = not detected above the reporting limit
--- = not analyzed
µg/L = micrograms per liter
USEPA = United States Environmental Protection Agency

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Pleasanton
1220 Quarry Lane
Pleasanton, CA 94566
Tel: (925)484-1919

TestAmerica Job ID: 720-61467-1
Client Project/Site: LRT 2014-2015 Annual Stormwater

For:
Weiss Associates
2200 Powell Street
Suite 925
Emeryville, California 94608

Attn: Mr. Scott Bourne

Authorized for release by:
12/3/2014 6:49:21 PM

Micah Smith, Project Manager II
(925)484-1919
micah.smith@testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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720-61467

Chain of Custody Record

12/3/2014

TestAmerica
1220 Quarry Lane
Pleasanton, CA 94566
Phone: 925-484-1919 ext.137

Please send analytic results, electronic deliverables and the original chain-of-custody form to:
labresults@weiss.com
mec@weiss.com
sab@weiss.com

INSTRUCTIONS FOR LAB PERSONNEL:
GeoTracker EDF required? ☐ Yes ☒ No
Equis 4-file EDWEDD required? ☒ Yes ☐ No
Specify analytic/prep method and detection limit in report.
Notify us of any anomalous peaks in GC or other scans
Call immediately with any questions or problems

157797

Client Contact		Project Manager: Scott Bourne	Protocol ID/path: J:\Levin Richmond\03b_Sampling	COC Number:
Weiss Associates		Project ID: 426-2026.01 Task 1.1.3		
2200 Powell Street, Suite 925		Sampled by: MEC		Page 1 of 1
Emeryville, CA 94608		Sample date(s): 11/20/14		
(510) 450-6000	Phone	Analysis Turnaround Time:		SDG number:
(510) 547-5043	FAX	Standard		
Job Name: LRT 2014-2015 Annual Storm Water Sampling		(Specify Days or Hours)		
Address: Levin Richmond Terminal, 402 Wright Avenue, Richmond, CA 94804				Sample Specific Notes:

Lab ID	Sample Identification	Sample Date	Sample Time	Sample Matrix	# of Cont.	pH (EPA 9040B)	Specific Conductance (SM 2510B)	Total Suspended Solids (SM 2540D)	Oil & Grease (EPA 1664A SGT-HEM)	Total Metals- Al,Cu, Fe, Ni, Pb, Zn (EPA 200.8 ICP-MS)
	TSI-E-112014	11/20/14	1315	W	5		✓	✓	✓	✓
	SW-4|5|6|7-112014	11/20/14	1445		5		✓	✓	✓	✓
	SW-4|5|6|7-112014-DUP	11/20/14	1450		5		✓	✓	✓	✓
	SW-11-112014	11/20/14	1500		5		✓	✓	✓	✓
	SW-3-112014	11/20/14	1535		5		✓	✓	✓	✓
	SW-12-112014	11/20/14	1650	W	5		✓	✓	✓	✓
					Field Filtered (X):					
	Preservation Used: 1= Ice, 2= HCl; 3= H_2SO_4; 4=HNO_3; 5=NaOH; 6= Other					1	1	1	1,2	1,4

720-61467 Chain of Custody

Special Instructions/QC Requirements & Comments: Level II Report. Report with reporting limit and method detection limit. Analyze and report only the metals listed above (Al, Cu, Fe, Ni, Pb, and Zn).

0.4/0.3/1.2°C

Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Mary Cunningham	Weiss	11/20/14 ~~1445~~ 1730 MEC		TA	11/21/14 @ 1025
	TA	11/21/14 @ 1510		TAP	11/21/14 1510
Relinquished by:	Company:	Date/Time	Received by:	Company	Date/Time

☒ = Samples released to a secured, locked area. ● = Samples received from a secured, locked area

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WORK ORDER NUMBER: 14-11-1863

The difference is service

AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: Weiss Associates

Client Project Name: LRT 2014-2015 Annual Storm Water Sampling / 426-2026.01 Task 1.1.3

Attention: Scott Bourne
2200 Powell Street
Suite 925
Emeryville, CA 94608-1879

Approved for release on 12/02/2014 by:
Virendra Patel
Project Manager

ResultLink

Email your PM

Eurofins Calscience, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

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Contents

Client Project Name: LRT 2014-2015 Annual Storm Water Sampling / 426-2026.01 Task 1.1.3
Work Order Number: 14-11-1863

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Work Order Narrative

Work Order: 14-11-1863 Page 1 of 1

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 11/22/14. They were assigned to Work Order 14-11-1863.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

New York NELAP air certification does not certify for all reported methods and analytes, reference the accredited items here: http://www.calscience.com/PDF/New_York.pdf

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

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Sample Summary

Client:	Weiss Associates 2200 Powell Street, Suite 925 Emeryville, CA 94608-1879	Work Order:	14-11-1863
		Project Name:	LRT 2014-2015 Annual Storm Water Sampling / 426-2026.01 Task 1.1.3
		PO Number:	
		Date/Time Received:	11/22/14 09:20
		Number of Containers:	6
Attn:	Scott Bourne		

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
SW-4/5/6/7-112014	14-11-1863-1	11/20/14 14:45	2	Aqueous
SW-4/5/6/7-112014-DUP	14-11-1863-2	11/20/14 14:50	2	Aqueous
SW-3-112014	14-11-1863-3	11/20/14 15:35	2	Aqueous

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Detections Summary

Client:	Weiss Associates 2200 Powell Street, Suite 925 Emeryville, CA 94608-1879	Work Order:	14-11-1863
		Project Name:	LRT 2014-2015 Annual Storm Water Sampling / 426-2026.01 Task 1.1.3
		Received:	11/22/14
Attn:	Scott Bourne		Page 1 of 1

Client SampleID Analyte	Result	Qualifiers	RL	Units	Method	Extraction
SW-4/5/6/7-112014 (14-11-1863-1)						
4,4'-DDT	20		1.9	ng/L	EPA 8081A	EPA 3510C
Endosulfan I	0.042	J	0.027*	ug/L	EPA 8081A	EPA 3510C
Endrin	11		1.9	ng/L	EPA 8081A	EPA 3510C
SW-4/5/6/7-112014-DUP (14-11-1863-2)						
4,4'-DDT	22		1.9	ng/L	EPA 8081A	EPA 3510C
Endosulfan I	0.039	J	0.028*	ug/L	EPA 8081A	EPA 3510C
Endrin	12		1.9	ng/L	EPA 8081A	EPA 3510C
SW-3-112014 (14-11-1863-3)						
Heptachlor	1.6	J	0.35*	ng/L	EPA 8081A	EPA 3510C

Subcontracted analyses, if any, are not included in this summary.

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* MDL is shown

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Analytical Report

Weiss Associates		Date Received:	11/22/14
2200 Powell Street, Suite 925		Work Order:	14-11-1863
Emeryville, CA 94608-1879		Preparation:	EPA 3510C
		Method:	EPA 8081A
		Units:	ug/L
Project: LRT 2014-2015 Annual Storm Water Sampling / 426-2026.01 Task 1.1.3			Page 1 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SW-4/5/6/7-112014	**14-11-1863-1-B**	**11/20/14 14:45**	**Aqueous**	**GC 51**	**11/24/14**	**11/25/14 18:26**	**141124L03**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Alpha-BHC	ND	0.096	0.027	1.00	
Beta-BHC	ND	0.096	0.029	1.00	
Delta-BHC	ND	0.096	0.027	1.00	
Endosulfan I	0.042	0.096	0.027	1.00	J
Endrin Aldehyde	ND	0.096	0.025	1.00	
Endosulfan II	ND	0.096	0.026	1.00	
Endosulfan Sulfate	ND	0.096	0.028	1.00	
Methoxychlor	ND	0.096	0.024	1.00	
Chlordane	ND	0.96	0.32	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Decachlorobiphenyl	85	50-135	
2,4,5,6-Tetrachloro-m-Xylene	93	50-135	

SW-4/5/6/7-112014-DUP	**14-11-1863-2-B**	**11/20/14 14:50**	**Aqueous**	**GC 51**	**11/24/14**	**11/25/14 18:40**	**141124L03**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Alpha-BHC	ND	0.10	0.028	1.00	
Beta-BHC	ND	0.10	0.030	1.00	
Delta-BHC	ND	0.10	0.029	1.00	
Endosulfan I	0.039	0.10	0.028	1.00	J
Endrin Aldehyde	ND	0.10	0.026	1.00	
Endosulfan II	ND	0.10	0.027	1.00	
Endosulfan Sulfate	ND	0.10	0.029	1.00	
Methoxychlor	ND	0.10	0.025	1.00	
Chlordane	ND	1.0	0.33	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Decachlorobiphenyl	83	50-135	
2,4,5,6-Tetrachloro-m-Xylene	89	50-135	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Weiss Associates		Date Received:	11/22/14
2200 Powell Street, Suite 925		Work Order:	14-11-1863
Emeryville, CA 94608-1879		Preparation:	EPA 3510C
		Method:	EPA 8081A
		Units:	ug/L
Project: LRT 2014-2015 Annual Storm Water Sampling / 426-2026.01 Task 1.1.3			Page 2 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SW-3-112014	**14-11-1863-3-B**	**11/20/14 15:35**	**Aqueous**	**GC 51**	**11/24/14**	**11/25/14 18:54**	**141124L03**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Alpha-BHC	ND	0.096	0.027	1.00	
Beta-BHC	ND	0.096	0.029	1.00	
Delta-BHC	ND	0.096	0.027	1.00	
Endosulfan I	ND	0.096	0.027	1.00	
Endrin Aldehyde	ND	0.096	0.025	1.00	
Endosulfan II	ND	0.096	0.026	1.00	
Endosulfan Sulfate	ND	0.096	0.028	1.00	
Methoxychlor	ND	0.096	0.024	1.00	
Chlordane	ND	0.96	0.32	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Decachlorobiphenyl	86	50-135	
2,4,5,6-Tetrachloro-m-Xylene	91	50-135	

Method Blank	**099-12-529-758**	**N/A**	**Aqueous**	**GC 51**	**11/24/14**	**11/25/14 18:11**	**141124L03**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Alpha-BHC	ND	0.10	0.028	1.00	
Beta-BHC	ND	0.10	0.030	1.00	
Delta-BHC	ND	0.10	0.029	1.00	
Endosulfan I	ND	0.10	0.028	1.00	
Endrin Aldehyde	ND	0.10	0.026	1.00	
Endosulfan II	ND	0.10	0.027	1.00	
Endosulfan Sulfate	ND	0.10	0.029	1.00	
Methoxychlor	ND	0.10	0.025	1.00	
Chlordane	ND	1.0	0.33	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Decachlorobiphenyl	88	50-135	
2,4,5,6-Tetrachloro-m-Xylene	93	50-135	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Weiss Associates		Date Received:	11/22/14
2200 Powell Street, Suite 925		Work Order:	14-11-1863
Emeryville, CA 94608-1879		Preparation:	EPA 3510C
		Method:	EPA 8081A
		Units:	ng/L
Project: LRT 2014-2015 Annual Storm Water Sampling / 426-2026.01 Task 1.1.3			Page 1 of 4

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SW-4/5/6/7-112014	**14-11-1863-1-A**	**11/20/14 14:45**	**Aqueous**	**GC 44**	**11/25/14**	**11/29/14 14:19**	**141125L07**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Aldrin	ND	1.9	0.31	1.00	
4,4'-DDD	ND	1.9	0.53	1.00	
4,4'-DDE	ND	1.9	0.46	1.00	
4,4'-DDT	20	1.9	0.53	1.00	
Alpha Chlordane	ND	1.9	0.47	1.00	
Dieldrin	ND	1.9	0.53	1.00	
Gamma Chlordane	ND	1.9	0.47	1.00	
Toxaphene	ND	24	7.9	1.00	
Endrin	11	1.9	0.30	1.00	
Gamma-BHC	ND	1.9	0.44	1.00	
Heptachlor	ND	1.9	0.35	1.00	
Heptachlor Epoxide	ND	1.9	0.33	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Decachlorobiphenyl	92	50-150	
2,4,5,6-Tetrachloro-m-Xylene	96	50-150	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Weiss Associates		Date Received:	11/22/14
2200 Powell Street, Suite 925		Work Order:	14-11-1863
Emeryville, CA 94608-1879		Preparation:	EPA 3510C
		Method:	EPA 8081A
		Units:	ng/L
Project: LRT 2014-2015 Annual Storm Water Sampling / 426-2026.01 Task 1.1.3			Page 2 of 4

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SW-4/5/6/7-112014-DUP	**14-11-1863-2-A**	**11/20/14 14:50**	**Aqueous**	**GC 44**	**11/25/14**	**11/29/14 14:33**	**141125L07**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Aldrin	ND	1.9	0.31	1.00	
4,4'-DDD	ND	1.9	0.53	1.00	
4,4'-DDE	ND	1.9	0.46	1.00	
4,4'-DDT	22	1.9	0.53	1.00	
Alpha Chlordane	ND	1.9	0.47	1.00	
Dieldrin	ND	1.9	0.53	1.00	
Gamma Chlordane	ND	1.9	0.47	1.00	
Toxaphene	ND	24	7.9	1.00	
Endrin	12	1.9	0.30	1.00	
Gamma-BHC	ND	1.9	0.44	1.00	
Heptachlor	ND	1.9	0.35	1.00	
Heptachlor Epoxide	ND	1.9	0.33	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Decachlorobiphenyl	97	50-150	
2,4,5,6-Tetrachloro-m-Xylene	97	50-150	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Weiss Associates		Date Received:	11/22/14
2200 Powell Street, Suite 925		Work Order:	14-11-1863
Emeryville, CA 94608-1879		Preparation:	EPA 3510C
		Method:	EPA 8081A
		Units:	ng/L
Project: LRT 2014-2015 Annual Storm Water Sampling / 426-2026.01 Task 1.1.3			Page 3 of 4

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SW-3-112014	**14-11-1863-3-A**	**11/20/14 15:35**	**Aqueous**	**GC 44**	**11/25/14**	**11/29/14 14:47**	**141125L07**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Aldrin	ND	1.9	0.31	1.00	
4,4'-DDD	ND	1.9	0.53	1.00	
4,4'-DDE	ND	1.9	0.46	1.00	
4,4'-DDT	ND	1.9	0.53	1.00	
Alpha Chlordane	ND	1.9	0.47	1.00	
Dieldrin	ND	1.9	0.53	1.00	
Gamma Chlordane	ND	1.9	0.47	1.00	
Toxaphene	ND	24	7.9	1.00	
Endrin	ND	1.9	0.30	1.00	
Gamma-BHC	ND	1.9	0.44	1.00	
Heptachlor	1.6	1.9	0.35	1.00	J
Heptachlor Epoxide	ND	1.9	0.33	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Decachlorobiphenyl	91	50-150	
2,4,5,6-Tetrachloro-m-Xylene	80	50-150	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Weiss Associates		Date Received:	11/22/14
2200 Powell Street, Suite 925		Work Order:	14-11-1863
Emeryville, CA 94608-1879		Preparation:	EPA 3510C
		Method:	EPA 8081A
		Units:	ng/L
Project: LRT 2014-2015 Annual Storm Water Sampling / 426-2026.01 Task 1.1.3			Page 4 of 4

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-16-036-13**	**N/A**	**Aqueous**	**GC 44**	**11/25/14**	**11/29/14 11:14**	**141125L07**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Aldrin	ND	2.0	0.33	1.00	
4,4'-DDD	0.80	2.0	0.55	1.00	J
4,4'-DDE	ND	2.0	0.48	1.00	
4,4'-DDT	ND	2.0	0.55	1.00	
Alpha Chlordane	ND	2.0	0.49	1.00	
Dieldrin	ND	2.0	0.55	1.00	
Gamma Chlordane	ND	2.0	0.49	1.00	
Toxaphene	ND	25	8.2	1.00	
Endrin	ND	2.0	0.31	1.00	
Gamma-BHC	0.60	2.0	0.46	1.00	J
Heptachlor	ND	2.0	0.36	1.00	
Heptachlor Epoxide	ND	2.0	0.34	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Decachlorobiphenyl	113	50-150	
2,4,5,6-Tetrachloro-m-Xylene	81	50-150	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Quality Control - LCS/LCSD

Weiss Associates		Date Received:	11/22/14
2200 Powell Street, Suite 925		Work Order:	14-11-1863
Emeryville, CA 94608-1879		Preparation:	EPA 3510C
		Method:	EPA 8081A
Project: LRT 2014-2015 Annual Storm Water Sampling / 426-2026.01 Task 1.1.3			Page 1 of 2

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-529-758	**LCS**	**Aqueous**	**GC 51**	**11/24/14**	**11/25/14 17:00**	**141124L03**
099-12-529-758	**LCSD**	**Aqueous**	**GC 51**	**11/24/14**	**11/25/14 17:14**	**141124L03**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Alpha-BHC	0.5000	0.4944	99	0.4956	99	50-135	36-149	0	0-25	
Gamma-BHC	0.5000	0.5003	100	0.5136	103	50-135	36-149	3	0-25	
Beta-BHC	0.5000	0.4108	82	0.4458	89	50-135	36-149	8	0-25	
Heptachlor	0.5000	0.5084	102	0.4579	92	50-135	36-149	10	0-25	
Delta-BHC	0.5000	0.5688	114	0.4934	99	50-135	36-149	14	0-25	
Aldrin	0.5000	0.4642	93	0.4186	84	50-135	36-149	10	0-25	
Heptachlor Epoxide	0.5000	0.4738	95	0.4706	94	50-135	36-149	1	0-25	
Endosulfan I	0.5000	0.4718	94	0.4752	95	50-135	36-149	1	0-25	
Dieldrin	0.5000	0.4955	99	0.4963	99	50-135	36-149	0	0-25	
4,4'-DDE	0.5000	0.4962	99	0.4905	98	50-135	36-149	1	0-25	
Endrin	0.5000	0.5254	105	0.5207	104	50-135	36-149	1	0-25	
Endrin Aldehyde	0.5000	0.6188	124	0.5010	100	50-135	36-149	21	0-25	
4,4'-DDD	0.5000	0.4929	99	0.4869	97	50-135	36-149	1	0-25	
Endosulfan II	0.5000	0.4834	97	0.4840	97	50-135	36-149	0	0-25	
4,4'-DDT	0.5000	0.5250	105	0.5012	100	50-135	36-149	5	0-25	
Endosulfan Sulfate	0.5000	0.4751	95	0.4776	96	50-135	36-149	1	0-25	
Methoxychlor	0.5000	0.4980	100	0.4936	99	50-135	36-149	1	0-25	

Total number of LCS compounds: 17
Total number of ME compounds: 0
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS/LCSD

Weiss Associates		Date Received:	11/22/14
2200 Powell Street, Suite 925		Work Order:	14-11-1863
Emeryville, CA 94608-1879		Preparation:	EPA 3510C
		Method:	EPA 8081A
Project: LRT 2014-2015 Annual Storm Water Sampling / 426-2026.01 Task 1.1.3			Page 2 of 2

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-16-036-13	**LCS**	**Aqueous**	**GC 44**	**11/25/14**	**11/29/14 11:28**	**141125L07**
099-16-036-13	**LCSD**	**Aqueous**	**GC 44**	**11/25/14**	**11/29/14 11:43**	**141125L07**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Aldrin	50.00	53.43	107	53.14	106	50-150	33-167	1	0-25	
4,4'-DDD	50.00	62.29	125	60.44	121	50-150	33-167	3	0-25	
4,4'-DDE	50.00	62.19	124	61.47	123	50-150	33-167	1	0-25	
4,4'-DDT	50.00	61.37	123	58.55	117	50-150	33-167	5	0-25	
Alpha Chlordane	50.00	55.26	111	57.19	114	50-150	33-167	3	0-25	
Dieldrin	50.00	61.47	123	59.54	119	50-150	33-167	3	0-25	
Gamma Chlordane	50.00	50.68	101	54.48	109	50-150	33-167	7	0-25	
Endrin	50.00	56.86	114	55.04	110	50-150	33-167	3	0-25	
Gamma-BHC	50.00	54.95	110	54.19	108	50-150	33-167	1	0-25	
Heptachlor	50.00	53.96	108	53.68	107	50-150	33-167	1	0-25	
Heptachlor Epoxide	50.00	56.24	112	55.87	112	50-150	33-167	1	0-25	

Total number of LCS compounds: 11
Total number of ME compounds: 0
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

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RPD: Relative Percent Difference. CL: Control Limits

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Sample Analysis Summary Report

Work Order: 14-11-1863

Method	Extraction	Chemist ID	Instrument	Analytical Location
EPA 8081A	EPA 3510C	669	GC 44	1
EPA 8081A	EPA 3510C	842	GC 51	1

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Glossary of Terms and Qualifiers

Work Order: 14-11-1863 Page 1 of 1

Qualifiers	Definition
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

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Chain of Custody Record

CalScience Environmental Lab
5063 Commercial Circle, Suite H
Concord, CA 94520
Phone: 925-689-9022

Please send analytic results, electronic deliverables and the original chain-of-custody form to:
labresults@weiss.com
mec@weiss.com
sab@weiss.com

INSTRUCTIONS FOR LAB PERSONNEL:
GeoTracker EDF required? ☐ Yes ☒ No
Equis 4-file EDWEDD required? ☒ Yes ☐ No
Specify analytic/prep method and detection limit in report.
Notify us of any anomalous peaks in GC or other scans.
Call immediately with any questions or problems.

14-11-1863

Client Contact		Project Manager: Scott Bourne	Protocol ID/path: J:\Levin Richmond\03b_Sampling	COC Number:
Weiss Associates		Project ID: 426-2026.01 Task 1.1.3		
2200 Powell Street, Suite 925		Sampled by: MEC		Page 1 of 1
Emeryville, CA 94608		Sample date(s): 11/20/14		
(510) 450-6000	Phone	Analysis Turnaround Time:		SDG number:
(510) 547-5043	FAX	Standard		
Job Name: LRT 2014-2015 Annual Storm Water Sampling		(Specify Days or Hours)		
Address: Levin Richmond Terminal, 402 Wright Avenue, Richmond, CA 94804				

Lab ID	Sample Identification	Sample Date	Sample Time	Sample Matrix	# of Cont.	Analyte (Method ID): Pesticides (EPA 8081A)	Sample Specific Notes:
1	SW-4/5/6/7-112014	11/20/14	1445	W	2	X	
2	SW-4/5/6/7-112014-dup	↓	1450	↓	↓	↓	
3	SW-3-112014	↓	1535	↓	↓	↓	
					Field Filtered (X):		
						1	

Preservation Used: 1= Ice, 2= HCl; 3= H_2SO_4; 4=HNO_3; 5=NaOH; 6= Other _____

Special Instructions/QC Requirements & Comments: Level II Report. Report with reporting limit and method detection limit. Please use agreed upon analytical methods for lowest detection limits.

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Mary Cunningham ☐	Weiss	11/21/14 1040	○	ECI	11/21/14 1040
Relinquished by: TO GSD ☐	Company: ECI	Date/Time: 11/21/14 1730	Received by: ○	Company: ECI	Date/Time: 11/22/14 0920
Relinquished by: ☐	Company:	Date/Time:	Received by: ○	Company:	Date/Time:

☒ = Samples released to a secured, locked area. ● = Samples received from a secured, locked area

(1863)

GSO

< WebShip > > > > >

800-322-5555 www.gso.com

Ship From:
ALAN KEMP
CAL SCIENCE- CONCORD
5063 COMMERCIAL CIRCLE #H
CONCORD, CA 94520

Ship To:
SAMPLE RECEIVING
CEL
7440 LINCOLN WAY
GARDEN GROVE, CA 92841

COD:
$0.00

Reference:
TERRA PACIFIC GROUP,WEISS, ARCADIS, PER, ETIC

Delivery Instructions:

Signature Type:
SIGNATURE REQUIRED

Tracking #: 526211907

SDS

ORC

A

GARDEN GROVE

D92845A

31104542

Print Date : 11/21/14 14:43 PM

Package 1 of 1

Send Label To Printer | ☑ Print All | Edit Shipment | Finish

LABEL INSTRUCTIONS:

Do not copy or reprint this label for additional shipments - each package must have a unique barcode.

STEP 1 - Use the "Send Label to Printer" button on this page to print the shipping label on a laser or inkjet printer.

STEP 2 - Fold this page in half.

STEP 3 - Securely attach this label to your package, do not cover the barcode.

STEP 4 - Request an on-call pickup for your package, if you do not have scheduled daily pickup service or Drop-off your package at the nearest GSO drop box. Locate nearest GSO dropbox locations using this link.

ADDITIONAL OPTIONS:

Send Label Via Email | Create Return Label

TERMS AND CONDITIONS:

By giving us your shipment to deliver, you agree to all the service terms and conditions described in this section.
Our liability for loss or damage to any package is limited to your actual damages or $100 whichever is less, unless you pay for and declare a higher authorized value. If you declare a higher value and pay the additional charge, our liability will be the lesser of your declared value or the actual value of your loss or damage. In any event, we will not be liable for any damage, whether direct, incidental, special or consequential, in excess of the declared value of a shipment whether or not we had knowledge that such damage might be incurred including but not limited to loss of income or profit. We will not be liable for your acts or omissions, including but not limited to improper or insufficient packaging, securing, marking or addressing. Also, we will not be liable if you or the recipient violates any of the terms of our agreement. We will not be liable for loss, damage or delay caused by events we cannot control, including but not limited to acts of God, perils of the air, weather conditions, act of public enemies, war, strikes, or civil commotion. The highest declared value for our GSO Priority Letter or GSO Priority Package is $500. For other shipments the highest declared value is $10,000 unless your package contains items of "extraordinary value", in which case the highest declared value we allow is $500. Items of "extraordinary value" include, but or not limited to, artwork, jewelry, furs, precious metals, tickets, negotiable instruments and other items with intrinsic value.

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WORK ORDER #: 14-11-1863

SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: Weiss

DATE: 11/22/14

TEMPERATURE: Thermometer ID: SC2 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 3.1 °C - 0.2 °C (CF) = 2.9 °C ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____)

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ Received at ambient temperature, placed on ice for transport by Courier.

Ambient Temperature: ☐ Air ☐ Filter Checked by: 802

CUSTODY SEALS INTACT:

☑ Cooler ☐ _____ ☐ No (Not Intact) ☐ Not Present ☐ N/A Checked by: 802

☐ Sample ☐ _____ ☐ No (Not Intact) ☑ Not Present Checked by: 802

SAMPLE CONDITION:	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑	☐	☐
☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels.			
☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished.			
Sampler's name indicated on COC	☑	☐	☐
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and good condition	☑	☐	☐
Proper containers and sufficient volume for analyses requested	☑	☐	☐
Analyses received within holding time	☑	☐	☐
Aqueous samples received within 15-minute holding time			
☐ pH ☐ Residual Chlorine ☐ Dissolved Sulfides ☐ Dissolved Oxygen	☐	☐	☑
Proper preservation noted on COC or sample container	☑	☐	☐
☐ Unpreserved vials received for Volatiles analysis			
Volatile analysis container(s) free of headspace	☐	☐	☑
Tedlar bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE:

Solid: ☐4ozCGJ ☐8ozCGJ ☐16ozCGJ ☐Sleeve (_____) ☐EnCores® ☐TerraCores® ☐_____

Aqueous: ☐VOA ☐VOAh ☐VOAna_2 ☐125AGB ☐125AGBh ☐125AGBp ☑1AGB ☐1AGBna_2 ☐1AGBs

☐500AGB ☐500AGJ ☐500AGJs ☐250AGB ☐250CGB ☐250CGBs ☐1PB ☐1PBna ☐500PB

☐250PB ☐250PBn ☐125PB ☐125PBznna ☐100PJ ☐100PJna_2 ☐_____ ☐_____ ☐_____

Air: ☐Tedlar® ☐Canister **Other:** ☐_____ **Trip Blank Lot#:**_____ Labeled/Checked by: 802

Container: C: Clear A: Amber P: Plastic G: Glass J: Jar B: Bottle Z: Ziploc/Resealable Bag E: Envelope Reviewed by: 776

Preservative: h: HCL n: HNO_3 na_2: $Na_2S_2O_3$ na: NaOH p: H_3PO_4 s: H_2SO_4 u: Ultra-pure znna: $ZnAc_2$+NaOH f: Filtered Scanned by: 776

SOP T100_090 (06/02/14)

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Pleasanton
1220 Quarry Lane
Pleasanton, CA 94566
Tel: (925)484-1919

TestAmerica Job ID: 720-61632-1
Client Project/Site: LRTC 2014-2015 Annual Stormwater

For:
Weiss Associates
2200 Powell Street
Suite 925
Emeryville, California 94608

Attn: Mary Cunningham

Authorized for release by:
12/10/2014 6:00:52 PM

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Results relate only to the items tested and the sample(s) as received by the laboratory.

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720-61632

720-61632 Chain of Custody

12/10/2014

Chain of Custody Record

TestAmerica
1220 Quarry Lane
Pleasanton, CA 94566
Phone: 925-484-1919 ext.137

Please send analytic results, electronic deliverables and the original chain-of-custody form to
labresults@weiss.com
mec@weiss.com
sab@weiss.com

INSTRUCTIONS FOR LAB PERSONNEL:
GeoTracker EDF required? ☐ Yes ☒ No
Equis 4-file EDWEDD required? ☒ Yes ☐ No
Specify analytic/prep method and detection limit in report
Notify us of any anomalous peaks in GC or other scans
Call immediately with any questions or problems

157974

Client Contact		Project Manager: Scott Bourne	Protocol ID/path: J:\Levin Richmond\03b_Sampling	COC Number:
Weiss Associates		Project ID: 426-2026.01 Task 1.1.3		
2200 Powell Street, Suite 925		Sampled by: M Cunningham		Page 1 of 1
Emeryville, CA 94608		Sample date(s): 12/2/14		
(510) 450-6000	Phone	Analysis Turnaround Time:		SDG number:
(510) 547-5043	FAX	Standard		
Job Name: LRT 2014-2015 Annual Storm Water Sampling		(Specify Days or Hours)		
Address: Levin Richmond Terminal, 402 Wright Avenue, Richmond, CA 94804				

Lab ID	Sample Identification	Sample Date	Sample Time	Sample Matrix	# of Cont.	pH (EPA 9040B)	Specific Conductance (SM 2510B)	Total Suspended Solids (SM 2540D)	Oil & Grease (EPA 1664A SGT-HEM)	Total Metals- Al, Cu, Fe, Ni, Pb, Zn (EPA 200.8 ICP-MS)	Sample Specific Notes:
1	SW-11-120214	12/02/14	1055	W	5	✓	✓	✓	✓	✓	
2	SW-12-120214		1300		5						
3	SW-3-120214		1145		5						
4	SW-3-120214-dup		1140		5						
5	SW-4/5/6/7-120214		1130		5						
6	SHEET-2-120214		1110		1						
7	TSI-E-120214		1210		5		✓	✓	✓	✓	
					Field Filtered (X):						
Preservation Used: 1=Ice, 2=HCl; 3=H_2SO_4; 4=HNO_3; 5=NaOH; 6=Other							1	1	1,2	1,4	

Special Instructions/QC Requirements & Comments: Level II Report. Report with reporting limit and method detection limit. Analyze and report only the metals listed above (Al, Cu, Fe, Ni, Pb, and Zn).

Relinquished by	Company	Date/Time	Received by	Company	Date/Time
M Cunningham	Weiss Associates	12/3/14 1030		TA	12-3-14 1030
	TA	12-3-14 1743		TA	12-3-14 1743

☒ = Samples released to a secured, locked area. ● = Samples received from a secured, locked area

0.1°C

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WORK ORDER NUMBER: 14-12-1377

The difference is service

AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: Weiss Associates

Client Project Name: LRT 2014-2015 Annual Storm Water Sampling / 426-2026.01 Task 1.1.3

Attention: Scott Bourne
2200 Powell Street
Suite 925
Emeryville, CA 94608-1879

Approved for release on 12/23/2014 by:
Virendra Patel
Project Manager

ResultLink

Email your PM

Eurofins Calscience, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

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NELAP ID: 03220CA | ACLASS DoD-ELAP ID: ADE-1864 (ISO/IEC 17025:2005) | CSDLAC ID: 10109 | SCAQMD ID: 93LA0830

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Contents

Client Project Name: LRT 2014-2015 Annual Storm Water Sampling / 426-2026.01 Task 1.1.3
Work Order Number: 14-12-1377

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Work Order Narrative

Work Order: 14-12-1377 Page 1 of 1

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 12/13/14. They were assigned to Work Order 14-12-1377.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

New York NELAP air certification does not certify for all reported methods and analytes, reference the accredited items here: http://www.calscience.com/PDF/New_York.pdf

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

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Sample Summary

Client:	Weiss Associates 2200 Powell Street, Suite 925 Emeryville, CA 94608-1879	Work Order:	14-12-1377
		Project Name:	LRT 2014-2015 Annual Storm Water Sampling / 426-2026.01 Task 1.1.3
		PO Number:	
		Date/Time Received:	12/13/14 09:00
		Number of Containers:	4
Attn:	Scott Bourne		

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
SW-3-121114	14-12-1377-1	12/11/14 08:40	2	Aqueous
SW-4/5/6/7-121114	14-12-1377-2	12/11/14 08:46	2	Aqueous

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Detections Summary

Client:	Weiss Associates 2200 Powell Street, Suite 925 Emeryville, CA 94608-1879	Work Order:	14-12-1377
		Project Name:	LRT 2014-2015 Annual Storm Water Sampling / 426-2026.01 Task 1.1.3
		Received:	12/13/14
Attn:	Scott Bourne		Page 1 of 1

Client SampleID Analyte	Result	Qualifiers	RL	Units	Method	Extraction
SW-3-121114 (14-12-1377-1)						
4,4'-DDD	2.3		2.2	ng/L	EPA 8081A	EPA 3510C
4,4'-DDT	3.9		2.2	ng/L	EPA 8081A	EPA 3510C
Endosulfan I	0.030	J	0.026*	ug/L	EPA 8081A	EPA 3510C
SW-4/5/6/7-121114 (14-12-1377-2)						
4,4'-DDD	3.3		1.9	ng/L	EPA 8081A	EPA 3510C
4,4'-DDT	4.9		1.9	ng/L	EPA 8081A	EPA 3510C

Subcontracted analyses, if any, are not included in this summary.

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* MDL is shown

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Analytical Report

Weiss Associates		Date Received:	12/13/14
2200 Powell Street, Suite 925		Work Order:	14-12-1377
Emeryville, CA 94608-1879		Preparation:	EPA 3510C
		Method:	EPA 8081A
		Units:	ug/L
Project: LRT 2014-2015 Annual Storm Water Sampling / 426-2026.01 Task 1.1.3			Page 1 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SW-3-121114	**14-12-1377-1-B**	**12/11/14 08:40**	**Aqueous**	**GC 51**	**12/15/14**	**12/19/14 19:12**	**141215L04**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Alpha-BHC	ND	0.095	0.027	1.00	
Beta-BHC	ND	0.095	0.029	1.00	
Delta-BHC	ND	0.095	0.027	1.00	
Endosulfan I	0.030	0.095	0.026	1.00	J
Endrin Aldehyde	ND	0.095	0.025	1.00	
Endosulfan II	ND	0.095	0.026	1.00	
Endosulfan Sulfate	ND	0.095	0.028	1.00	
Methoxychlor	ND	0.095	0.024	1.00	
Chlordane	ND	0.95	0.31	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Decachlorobiphenyl	90	50-135	
2,4,5,6-Tetrachloro-m-Xylene	83	50-135	

SW-4/5/6/7-121114	**14-12-1377-2-B**	**12/11/14 08:46**	**Aqueous**	**GC 51**	**12/15/14**	**12/19/14 18:58**	**141215L04**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Alpha-BHC	ND	0.095	0.027	1.00	
Beta-BHC	ND	0.095	0.029	1.00	
Delta-BHC	ND	0.095	0.027	1.00	
Endosulfan I	ND	0.095	0.026	1.00	
Endrin Aldehyde	ND	0.095	0.025	1.00	
Endosulfan II	ND	0.095	0.026	1.00	
Endosulfan Sulfate	ND	0.095	0.028	1.00	
Methoxychlor	ND	0.095	0.024	1.00	
Chlordane	ND	0.95	0.31	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Decachlorobiphenyl	85	50-135	
2,4,5,6-Tetrachloro-m-Xylene	86	50-135	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Weiss Associates		Date Received:	12/13/14
2200 Powell Street, Suite 925		Work Order:	14-12-1377
Emeryville, CA 94608-1879		Preparation:	EPA 3510C
		Method:	EPA 8081A
		Units:	ug/L
Project: LRT 2014-2015 Annual Storm Water Sampling / 426-2026.01 Task 1.1.3			Page 2 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-12-529-763**	**N/A**	**Aqueous**	**GC 51**	**12/15/14**	**12/16/14 13:01**	**141215L04**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Alpha-BHC	ND	0.10	0.028	1.00	
Beta-BHC	ND	0.10	0.030	1.00	
Delta-BHC	ND	0.10	0.029	1.00	
Endosulfan I	ND	0.10	0.028	1.00	
Endrin Aldehyde	ND	0.10	0.026	1.00	
Endosulfan II	ND	0.10	0.027	1.00	
Endosulfan Sulfate	ND	0.10	0.029	1.00	
Methoxychlor	ND	0.10	0.025	1.00	
Chlordane	ND	1.0	0.33	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Decachlorobiphenyl	92	50-135	
2,4,5,6-Tetrachloro-m-Xylene	72	50-135	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Weiss Associates		Date Received:	12/13/14
2200 Powell Street, Suite 925		Work Order:	14-12-1377
Emeryville, CA 94608-1879		Preparation:	EPA 3510C
		Method:	EPA 8081A
		Units:	ng/L
Project: LRT 2014-2015 Annual Storm Water Sampling / 426-2026.01 Task 1.1.3			Page 1 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SW-3-121114	**14-12-1377-1-A**	**12/11/14 08:40**	**Aqueous**	**GC 44**	**12/15/14**	**12/19/14 14:16**	**141215L17**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Aldrin	ND	2.2	0.35	1.00	
4,4'-DDD	2.3	2.2	0.59	1.00	
4,4'-DDE	ND	2.2	0.51	1.00	
4,4'-DDT	3.9	2.2	0.59	1.00	
Alpha Chlordane	ND	2.2	0.53	1.00	
Dieldrin	ND	2.2	0.59	1.00	
Gamma Chlordane	ND	2.2	0.53	1.00	
Toxaphene	ND	27	8.9	1.00	
Endrin	ND	2.2	0.33	1.00	
Gamma-BHC	ND	2.2	0.50	1.00	
Heptachlor	ND	2.2	0.39	1.00	
Heptachlor Epoxide	ND	2.2	0.36	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Decachlorobiphenyl	98	50-150	
2,4,5,6-Tetrachloro-m-Xylene	80	50-150	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Weiss Associates		Date Received:	12/13/14
2200 Powell Street, Suite 925		Work Order:	14-12-1377
Emeryville, CA 94608-1879		Preparation:	EPA 3510C
		Method:	EPA 8081A
		Units:	ng/L
Project: LRT 2014-2015 Annual Storm Water Sampling / 426-2026.01 Task 1.1.3			Page 2 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SW-4/5/6/7-121114	**14-12-1377-2-A**	**12/11/14 08:46**	**Aqueous**	**GC 44**	**12/15/14**	**12/19/14 14:30**	**141215L17**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Aldrin	ND	1.9	0.31	1.00	
4,4'-DDD	3.3	1.9	0.52	1.00	
4,4'-DDE	ND	1.9	0.46	1.00	
4,4'-DDT	4.9	1.9	0.53	1.00	
Alpha Chlordane	ND	1.9	0.47	1.00	
Dieldrin	ND	1.9	0.52	1.00	
Gamma Chlordane	ND	1.9	0.47	1.00	
Toxaphene	ND	24	7.9	1.00	
Endrin	ND	1.9	0.30	1.00	
Gamma-BHC	ND	1.9	0.44	1.00	
Heptachlor	ND	1.9	0.34	1.00	
Heptachlor Epoxide	ND	1.9	0.32	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Decachlorobiphenyl	70	50-150	
2,4,5,6-Tetrachloro-m-Xylene	64	50-150	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Weiss Associates		Date Received:	12/13/14
2200 Powell Street, Suite 925		Work Order:	14-12-1377
Emeryville, CA 94608-1879		Preparation:	EPA 3510C
		Method:	EPA 8081A
		Units:	ng/L
Project: LRT 2014-2015 Annual Storm Water Sampling / 426-2026.01 Task 1.1.3			Page 3 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-16-036-15**	**N/A**	**Aqueous**	**GC 44**	**12/15/14**	**12/19/14 14:02**	**141215L17**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Aldrin	ND	2.0	0.33	1.00	
4,4'-DDD	ND	2.0	0.55	1.00	
4,4'-DDE	ND	2.0	0.48	1.00	
4,4'-DDT	ND	2.0	0.55	1.00	
Alpha Chlordane	ND	2.0	0.49	1.00	
Dieldrin	ND	2.0	0.55	1.00	
Gamma Chlordane	ND	2.0	0.49	1.00	
Toxaphene	ND	25	8.2	1.00	
Endrin	ND	2.0	0.31	1.00	
Gamma-BHC	ND	2.0	0.46	1.00	
Heptachlor	ND	2.0	0.36	1.00	
Heptachlor Epoxide	ND	2.0	0.34	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Decachlorobiphenyl	119	50-150	
2,4,5,6-Tetrachloro-m-Xylene	97	50-150	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Quality Control - LCS/LCSD

Weiss Associates		Date Received:	12/13/14
2200 Powell Street, Suite 925		Work Order:	14-12-1377
Emeryville, CA 94608-1879		Preparation:	EPA 3510C
		Method:	EPA 8081A
Project: LRT 2014-2015 Annual Storm Water Sampling / 426-2026.01 Task 1.1.3			Page 1 of 2

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-529-763	**LCS**	**Aqueous**	**GC 51**	**12/15/14**	**12/16/14 13:16**	**141215L04**
099-12-529-763	**LCSD**	**Aqueous**	**GC 51**	**12/15/14**	**12/16/14 12:47**	**141215L04**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Alpha-BHC	0.5000	0.3526	71	0.3770	75	50-135	36-149	7	0-25	
Gamma-BHC	0.5000	0.4351	87	0.5036	101	50-135	36-149	15	0-25	
Beta-BHC	0.5000	0.4068	81	0.4097	82	50-135	36-149	1	0-25	
Heptachlor	0.5000	0.5166	103	0.5142	103	50-135	36-149	0	0-25	
Delta-BHC	0.5000	0.4398	88	0.4484	90	50-135	36-149	2	0-25	
Aldrin	0.5000	0.4957	99	0.4909	98	50-135	36-149	1	0-25	
Heptachlor Epoxide	0.5000	0.4779	96	0.4720	94	50-135	36-149	1	0-25	
Endosulfan I	0.5000	0.5183	104	0.5087	102	50-135	36-149	2	0-25	
Dieldrin	0.5000	0.4974	99	0.4955	99	50-135	36-149	0	0-25	
4,4'-DDE	0.5000	0.4530	91	0.4722	94	50-135	36-149	4	0-25	
Endrin	0.5000	0.5181	104	0.5295	106	50-135	36-149	2	0-25	
Endrin Aldehyde	0.5000	0.4444	89	0.4132	83	50-135	36-149	7	0-25	
4,4'-DDD	0.5000	0.4877	98	0.4972	99	50-135	36-149	2	0-25	
Endosulfan II	0.5000	0.4809	96	0.4845	97	50-135	36-149	1	0-25	
4,4'-DDT	0.5000	0.4566	91	0.4635	93	50-135	36-149	1	0-25	
Endosulfan Sulfate	0.5000	0.4769	95	0.4822	96	50-135	36-149	1	0-25	
Methoxychlor	0.5000	0.5172	103	0.5259	105	50-135	36-149	2	0-25	

Total number of LCS compounds: 17
Total number of ME compounds: 0
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS/LCSD

Weiss Associates		Date Received:	12/13/14
2200 Powell Street, Suite 925		Work Order:	14-12-1377
Emeryville, CA 94608-1879		Preparation:	EPA 3510C
		Method:	EPA 8081A
Project: LRT 2014-2015 Annual Storm Water Sampling / 426-2026.01 Task 1.1.3			Page 2 of 2

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-16-036-15	**LCS**	**Aqueous**	**GC 44**	**12/15/14**	**12/22/14 14:04**	**141215L17**
099-16-036-15	**LCSD**	**Aqueous**	**GC 44**	**12/15/14**	**12/22/14 14:18**	**141215L17**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Aldrin	50.00	38.21	76	37.79	76	50-150	33-167	1	0-25	
4,4'-DDD	50.00	64.75	130	65.51	131	50-150	33-167	1	0-25	
4,4'-DDE	50.00	60.80	122	61.76	124	50-150	33-167	2	0-25	
4,4'-DDT	50.00	62.05	124	63.21	126	50-150	33-167	2	0-25	
Alpha Chlordane	50.00	54.09	108	55.01	110	50-150	33-167	2	0-25	
Dieldrin	50.00	65.14	130	65.89	132	50-150	33-167	1	0-25	
Gamma Chlordane	50.00	55.08	110	55.85	112	50-150	33-167	1	0-25	
Endrin	50.00	59.99	120	61.06	122	50-150	33-167	2	0-25	
Gamma-BHC	50.00	59.22	118	60.25	120	50-150	33-167	2	0-25	
Heptachlor	50.00	46.03	92	46.91	94	50-150	33-167	2	0-25	
Heptachlor Epoxide	50.00	59.15	118	60.08	120	50-150	33-167	2	0-25	

Total number of LCS compounds: 11
Total number of ME compounds: 0
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

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RPD: Relative Percent Difference. CL: Control Limits

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Sample Analysis Summary Report

Work Order: 14-12-1377

Method	Extraction	Chemist ID	Instrument	Analytical Location
EPA 8081A	EPA 3510C	421	GC 44	1
EPA 8081A	EPA 3510C	669	GC 51	1

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Glossary of Terms and Qualifiers

Work Order: 14-12-1377 Page 1 of 1

Qualifiers	Definition
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

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Chain of Custody Record

CalScience Environmental Lab
5063 Commercial Circle, Suite H
Concord, CA 94520
Phone: 925-689-9022

Please send analytic results, electronic deliverables and the original chain-of-custody form to:
labresults@weiss.com
mec@weiss.com
sab@weiss.com

INSTRUCTIONS FOR LAB PERSONNEL:
GeoTracker EDF required? ☐ Yes ☒ No
Equis 4-file EDWEDD required? ☒ Yes ☐ No
Specify analytic/prep method and detection limit in report.
Notify us of any anomalous peaks in GC or other scans.
Call immediately with any questions or problems.

14-12-1377

Client Contact		Project Manager: Scott Bourne	Protocol ID/path: J:\Levin Richmond\03b_Sampling	COC Number:
Weiss Associates		Project ID: 426-2026.01 Task 1.1.3		
2200 Powell Street, Suite 925		Sampled by: MEC/SAB		Page____ of ____
Emeryville, CA 94608		Sample date(s): 12/11/14		
(510) 450-6000	Phone	Analysis Turnaround Time:		SDG number:
(510) 547-5043	FAX	Standard		
Job Name: LRT 2014-2015 Annual Storm Water Sampling		(Specify Days or Hours)		
Address: Levin Richmond Terminal, 402 Wright Avenue, Richmond, CA 94804				

Lab ID	Sample Identification	Sample Date	Sample Time	Sample Matrix	# of Cont.	Pesticides (EPA 8081A)	Sample Specific Notes:
1	SW-3-121114	12/11/14	0840	W	2	✓	
2	SW-4/5/6/7-121114	↓	0846	W	2	✓	
					Field Filtered (X):		
Preservation Used: 1= Ice, 2= HCl; 3= H_2SO_4; 4=HNO_3; 5=NaOH; 6= Other _____						1	

Special Instructions/QC Requirements & Comments: Level II Report. Report with reporting limit and method detection limit. Please use agreed upon analytical methods for lowest detection limits.

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
AH Rz ☐	Weiss Assoc	12/12/14 0750	Tom O'Malley ○	ECI	12/12/14 0950
Relinquished by: Tom O'Malley TO 0950 ☐	Company: ECI	Date/Time: 12/12/14 1730	Received by: ○	Company: ECI	Date/Time: 12/13/14 0900
Relinquished by: ☐	Company:	Date/Time:	Received by: ○	Company:	Date/Time:

☒ = Samples released to a secured, locked area. ● = Samples received from a secured, locked area

377

GSO

< WebShip > > > > >

800-322-5555 www.gso.com

Ship From:
ALAN KEMP
CAL SCIENCE- CONCORD
5063 COMMERCIAL CIRCLE #H
CONCORD, CA 94520

Ship To:
SAMPLE RECEIVING
CEL
7440 LINCOLN WAY
GARDEN GROVE, CA 92841

COD:
$0.00

Reference:
TERRA PACIFIC GROUP, CARDNO ERI,WEISS, SCHNITZER

Delivery Instructions:

Signature Type:
SIGNATURE REQUIRED

Tracking #: 526383285

SDS

ORC

A

GARDEN GROVE

D92845A

31808175

Print Date : 12/12/14 15:27 PM

Package 1 of 1

Send Label To Printer | ☑ Print All | Edit Shipment | Finish

LABEL INSTRUCTIONS:

Do not copy or reprint this label for additional shipments - each package must have a unique barcode.

STEP 1 - Use the "Send Label to Printer" button on this page to print the shipping label on a laser or inkjet printer.
STEP 2 - Fold this page in half.
STEP 3 - Securely attach this label to your package, do not cover the barcode.
STEP 4 - Request an on-call pickup for your package, if you do not have scheduled daily pickup service or Drop-off your package at the nearest GSO drop box. Locate nearest GSO dropbox locations using this link.

ADDITIONAL OPTIONS:

Send Label Via Email | Create Return Label

TERMS AND CONDITIONS:

By giving us your shipment to deliver, you agree to all the service terms and conditions described in this section.
Our liability for loss or damage to any package is limited to your actual damages or $100 whichever is less, unless you pay for and declare a higher authorized value. If you declare a higher value and pay the additional charge, our liability will be the lesser of your declared value or the actual value of your loss or damage. In any event, we will not be liable for any damage, whether direct, incidental, special or consequential, in excess of the declared value of a shipment whether or not we had knowledge that such damage might be incurred including but not limited to loss of income or profit. We will not be liable for your acts or omissions, including but not limited to improper or insufficient packaging, securing, marking or addressing. Also, we will not be liable if you or the recipient violates any of the terms of our agreement. We will not be liable for loss, damage or delay caused by events we cannot control, including but not limited to acts of God, perils of the air, weather conditions, act of public enemies, war, strikes, or civil commotion. The highest declared value for our GSO Priority Letter or GSO Priority Package is $500. For other shipments the highest declared value is $10,000 unless your package contains items of "extraordinary value", in which case the highest declared value we allow is $500. Items of "extraordinary value" include, but or not limited to, artwork, jewelry, furs, precious metals, tickets, negotiable instruments and other items with intrinsic value.

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WORK ORDER #: 14-12-1372

SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: Weiss

DATE: 12/13/14

TEMPERATURE: Thermometer ID: SC2 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 3.2 °C - 0.2 °C (CF) = 3.0 °C ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____)

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ **Received at ambient temperature, placed on ice for transport by Courier.**

Ambient Temperature: ☐ Air ☐ Filter **Checked by:** SR

CUSTODY SEALS INTACT:

☑ Cooler ☐_____ ☐ No (Not Intact) ☐ Not Present ☐ N/A **Checked by:** SR

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present **Checked by:** SR

SAMPLE CONDITION:	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑	☐	☐
☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels.			
☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished.			
Sampler's name indicated on COC	☑	☐	☐
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and good condition	☑	☐	☐
Proper containers and sufficient volume for analyses requested	☑	☐	☐
Analyses received within holding time	☑	☐	☐
Aqueous samples received within 15-minute holding time			
☐ pH ☐ Residual Chlorine ☐ Dissolved Sulfides ☐ Dissolved Oxygen	☐	☐	☑
Proper preservation noted on COC or sample container	☑	☐	☐
☐ Unpreserved vials received for Volatiles analysis			
Volatile analysis container(s) free of headspace	☐	☐	☑
Tedlar bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE:

Solid: ☐4ozCGJ ☐8ozCGJ ☐16ozCGJ ☐Sleeve (_____) ☐EnCores® ☐TerraCores® ☐_____

Aqueous: ☐VOA ☐VOA**h** ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☑1AGB (2) ☐1AGB**na$_2$** ☐1AGB**s**

☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐1PB**na** ☐500PB

☐250PB ☐250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐_____ ☐_____

Air: ☐Tedlar® ☐Canister **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** SR

Container: **C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** TB

Preservative: **h:** HCL **n:** HNO_3 **na$_2$:** $Na_2S_2O_3$ **na:** NaOH **p:** H_3PO_4 **s:** H_2SO_4 **u:** Ultra-pure **znna:** $ZnAc_2$+NaOH **f:** Filtered **Scanned by:** TB

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Pleasanton
1220 Quarry Lane
Pleasanton, CA 94566
Tel: (925)484-1919

TestAmerica Job ID: 720-61844-1
Client Project/Site: LRT 2014-2015 Annual Stormwater Sampling

For:
Weiss Associates
2200 Powell Street
Suite 925
Emeryville, California 94608

Attn: Mr. Scott Bourne

Authorized for release by:
12/24/2014 12:06:03 PM

Micah Smith, Project Manager II
(925)484-1919
micah.smith@testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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720-61844

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12/24/2014

Chain of Custody Record

TestAmerica
1220 Quarry Lane
Pleasanton, CA 94566
Phone: 925-484-1919 ext.137

Please send analytic results, electronic deliverables and the original chain-of-custody form to:
labresults@weiss.com
mec@weiss.com
sab@weiss.com

INSTRUCTIONS FOR LAB PERSONNEL:
GeoTracker EDF required? ☐ Yes ☒ No
Equis 4-file EDWEDD required? ☒ Yes ☐ No
Specify analytic/prep method and detection limit in report.
Notify us of any anomalous peaks in GC or other scans
Call immediately with any questions or problems

Client Contact		Project Manager: Scott Bourne	Protocol ID/path: J:\Levin Richmond\03b_Sampling	COC Number:
Weiss Associates		Project ID: 426-2026.01 Task 1.1.3		
2200 Powell Street, Suite 925		Sampled by: MEC/SAB		Page____ of ____
Emeryville, CA 94608		Sample date(s): 12/11		
(510) 450-6000	Phone	Analysis Turnaround Time:		SDG number:
(510) 547-5043	FAX	Standard		
Job Name: LRT 2014-2015 Annual Storm Water Sampling		(Specify Days or Hours)		
Address: Levin Richmond Terminal, 402 Wright Avenue, Richmond, CA 94804				

Lab ID	Sample Identification	Sample Date	Sample Time	Sample Matrix	# of Cont.	pH (EPA 9040B)	Total Suspended Solids (SM 2540D)	Oil & Grease (EPA 1664A SGT-HEM)	Total Metals- Al,Cu, Fe, Ni, Pb, Zn (EPA 200.8 ICP-MS)	Specific Conductance SM 2510B	Sample Specific Notes:
	TS1-E- 121114	12/11/14	0945	W	5	✓	✓	✓	✓	✓	
	SW-3- 121114		0840	W	5	✓	✓	✓	✓	✓	
	SW-4/5/6/7- 121114		0946	W	5	✓	✓	✓	✓	✓	
	SW-11- 121114		0955	W	5	✓	✓	✓	✓	✓	
	SW-12- 121114		0910	W	~~5~~ 12	✓	✓	✓	✓	✓	MS/MSD
	SHEET-1- 121114		0745	W	1		✓				
	SHEET-2- 121114		0740	W	1		✓				
	SW-11-121114-dup		0900		5	✓	✓	✓	✓	✓	
					Field Filtered (X):						
					Preservation Used: 1= Ice, 2= HCl; 3= H_2SO_4; 4=HNO_3; 5=NaOH; 6= Other ____	1	1	1, 2	1, 4	1	

720-61844 Chain of Custody

Special Instructions/QC Requirements & Comments: Level II Report. Report with reporting limit and method detection limit. Analyze and report only the metals listed above (Al, Cu, Fe, Ni, Pb, and Zn).

5.1/4.8/5.5°c

Relinquished by:	Company	Date/Time:	Received by:	Company:	Date/Time:
Jeff Bourn	Weiss Assoc	12/11 830AM	Cheer #3JJ	WCG	12/12 0830
Cheer #3JJ	WCG	12/12 0940	BG	TestAmerica	12/12/14 0940

☒ = Samples released to a secured, locked area. ● = Samples received from a secured, locked area

720-61844

158180

12/24/2014

Chain of Custody Record

TestAmerica
1220 Quarry Lane
Pleasanton, CA 94566
Phone: 925-484-1919 ext.137

Please send analytic results, electronic deliverables and the original chain-of-custody form to
labresults@weiss.com
mec@weiss.com
sab@weiss.com

INSTRUCTIONS FOR LAB PERSONNEL:

GeoTracker EDF required? ☐ Yes ☒ No

Equis 4-file EDWEDD required? ☒ Yes ☐ No

Specify analytic/prep method and detection limit in report

Notify us of any anomalous peaks in GC or other scans

Call immediately with any questions or problems

Client Contact	
Weiss Associates	
2200 Powell Street, Suite 925	
Emeryville, CA 94608	
(510) 450-6000	Phone
(510) 547-5043	FAX
Job Name:	LRT 2014-2015 Annual Storm Water Sampling
Address:	Levin Richmond Terminal, 402 Wright Avenue, Richmond, CA 94804

Project Manager: Scott Bourne
Project ID: 426-2026.01 Task 1.1.3
Sampled by: MEC/SAB
Sample date(s): 12/11/14

Analysis Turnaround Time:
Standard
(Specify Days or Hours)

Protocol ID/path: J:\Levin Richmond\03b_Sampling

COC Number:

Page____ of ____

SDG number:

Lab ID	Sample Identification	Sample Date	Sample Time	Sample Matrix	# of Cont.	Analyte (Method ID):	Total Suspended Solids (SM 2540D)	Total Metals- Al,Cu, Fe, Ni, Pb, Zn (EPA 200 8 ICP-MS)	Oil + Grease 1664A	pH 9040B SGT-HEM													Sample Specific Notes:
	TS1-I- 121114	12/11/14	0940	W	5		✓	✓	✓	✓													
						Field Filtered (X):																	
Preservation Used: 1= Ice, 2= HCl; 3= H_2SO_4; 4=HNO_3; 5=NaOH; 6= Other ________							1	1, 4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	

Special Instructions/QC Requirements & Comments: Level II Report. Report with reporting limit and method detection limit. Analyze and report only the metals listed above (Al, Cu, Fe, Ni, Pb, and Zn).

Relinquished by		Company	Date/Time	Received by		Company	Date/Time
	☐	WeissAssoc	12/11/14 830pm	Oscar #375	○	WCG	12/12 0830
Oscar #375	☐	WCG	12/12 0940		○	TestAmerica	12/12/14 0940
	☐				○		

☒ = Samples released to a secured, locked area.

● = Samples received from a secured, locked area

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WORK ORDER NUMBER: 14-12-0426

The difference is service

AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: Weiss Associates

Client Project Name: LRT 2014-2015 Annual Storm Water Sampling / 426-2026.01 Task 1.1.3

Attention: Scott Bourne
2200 Powell Street
Suite 925
Emeryville, CA 94608-1879

Approved for release on 12/22/2014 by:
Virendra Patel
Project Manager

ResultLink

Email your PM

Eurofins Calscience, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

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Contents

Client Project Name: LRT 2014-2015 Annual Storm Water Sampling / 426-2026.01 Task 1.1.3
Work Order Number: 14-12-0426

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Work Order Narrative

Work Order: 14-12-0426 Page 1 of 1

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 12/04/14. They were assigned to Work Order 14-12-0426.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

New York NELAP air certification does not certify for all reported methods and analytes, reference the accredited items here: http://www.calscience.com/PDF/New_York.pdf

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

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Sample Summary

Client:	Weiss Associates 2200 Powell Street, Suite 925 Emeryville, CA 94608-1879	Work Order:	14-12-0426
		Project Name:	LRT 2014-2015 Annual Storm Water Sampling / 426-2026.01 Task 1.1.3
		PO Number:	
		Date/Time Received:	12/04/14 10:40
		Number of Containers:	6
Attn:	Scott Bourne		

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
SW-3-120214	14-12-0426-1	12/02/14 11:40	2	Aqueous
SW-3-120214-dup	14-12-0426-2	12/02/14 11:45	2	Aqueous
SW-4/5/6/7-120214	14-12-0426-3	12/02/14 11:30	2	Aqueous

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Detections Summary

Client:	Weiss Associates 2200 Powell Street, Suite 925 Emeryville, CA 94608-1879	Work Order:	14-12-0426
		Project Name:	LRT 2014-2015 Annual Storm Water Sampling / 426-2026.01 Task 1.1.3
		Received:	12/04/14
Attn:	Scott Bourne		Page 1 of 1

Client SampleID Analyte	Result	Qualifiers	RL	Units	Method	Extraction
SW-3-120214 (14-12-0426-1)						
4,4'-DDD	2.8		2.0	ng/L	EPA 8081A	EPA 3510C
4,4'-DDE	14		2.0	ng/L	EPA 8081A	EPA 3510C
4,4'-DDT	19		2.0	ng/L	EPA 8081A	EPA 3510C
SW-3-120214-dup (14-12-0426-2)						
4,4'-DDD	2.5		1.9	ng/L	EPA 8081A	EPA 3510C
4,4'-DDE	14		1.9	ng/L	EPA 8081A	EPA 3510C
4,4'-DDT	19		1.9	ng/L	EPA 8081A	EPA 3510C
SW-4/5/6/7-120214 (14-12-0426-3)						
4,4'-DDT	3.5		1.9	ng/L	EPA 8081A	EPA 3510C

Subcontracted analyses, if any, are not included in this summary.

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* MDL is shown

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Analytical Report

Weiss Associates		Date Received:	12/04/14
2200 Powell Street, Suite 925		Work Order:	14-12-0426
Emeryville, CA 94608-1879		Preparation:	EPA 3510C
		Method:	EPA 8081A
		Units:	ug/L
Project: LRT 2014-2015 Annual Storm Water Sampling / 426-2026.01 Task 1.1.3			Page 1 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SW-3-120214	**14-12-0426-1-A**	**12/02/14 11:40**	**Aqueous**	**GC 51**	**12/08/14**	**12/09/14 17:11**	**141208L13**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Alpha-BHC	ND	0.097	0.027	1.00	
Beta-BHC	ND	0.097	0.029	1.00	
Delta-BHC	ND	0.097	0.028	1.00	
Endosulfan I	ND	0.097	0.027	1.00	
Endrin Aldehyde	ND	0.097	0.026	1.00	
Endosulfan II	ND	0.097	0.026	1.00	
Endosulfan Sulfate	ND	0.097	0.028	1.00	
Methoxychlor	ND	0.097	0.024	1.00	
Chlordane	ND	0.97	0.32	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Decachlorobiphenyl	88	50-135	
2,4,5,6-Tetrachloro-m-Xylene	92	50-135	

SW-3-120214-dup	**14-12-0426-2-A**	**12/02/14 11:45**	**Aqueous**	**GC 51**	**12/08/14**	**12/09/14 17:25**	**141208L13**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Alpha-BHC	ND	0.097	0.027	1.00	
Beta-BHC	ND	0.097	0.029	1.00	
Delta-BHC	ND	0.097	0.028	1.00	
Endosulfan I	ND	0.097	0.027	1.00	
Endrin Aldehyde	ND	0.097	0.026	1.00	
Endosulfan II	ND	0.097	0.026	1.00	
Endosulfan Sulfate	ND	0.097	0.028	1.00	
Methoxychlor	ND	0.097	0.024	1.00	
Chlordane	ND	0.97	0.32	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Decachlorobiphenyl	90	50-135	
2,4,5,6-Tetrachloro-m-Xylene	94	50-135	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Weiss Associates		Date Received:	12/04/14
2200 Powell Street, Suite 925		Work Order:	14-12-0426
Emeryville, CA 94608-1879		Preparation:	EPA 3510C
		Method:	EPA 8081A
		Units:	ug/L
Project: LRT 2014-2015 Annual Storm Water Sampling / 426-2026.01 Task 1.1.3			Page 2 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SW-4/5/6/7-120214	**14-12-0426-3-A**	**12/02/14 11:30**	**Aqueous**	**GC 51**	**12/08/14**	**12/09/14 17:40**	**141208L13**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Alpha-BHC	ND	0.096	0.027	1.00	
Beta-BHC	ND	0.096	0.029	1.00	
Delta-BHC	ND	0.096	0.027	1.00	
Endosulfan I	ND	0.096	0.027	1.00	
Endrin Aldehyde	ND	0.096	0.025	1.00	
Endosulfan II	ND	0.096	0.026	1.00	
Endosulfan Sulfate	ND	0.096	0.028	1.00	
Methoxychlor	ND	0.096	0.024	1.00	
Chlordane	ND	0.96	0.32	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Decachlorobiphenyl	79	50-135	
2,4,5,6-Tetrachloro-m-Xylene	88	50-135	

Method Blank	**099-12-529-762**	**N/A**	**Aqueous**	**GC 51**	**12/08/14**	**12/09/14 16:01**	**141208L13**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Alpha-BHC	ND	0.10	0.028	1.00	
Beta-BHC	ND	0.10	0.030	1.00	
Delta-BHC	ND	0.10	0.029	1.00	
Endosulfan I	ND	0.10	0.028	1.00	
Endrin Aldehyde	ND	0.10	0.026	1.00	
Endosulfan II	ND	0.10	0.027	1.00	
Endosulfan Sulfate	ND	0.10	0.029	1.00	
Methoxychlor	ND	0.10	0.025	1.00	
Chlordane	ND	1.0	0.33	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Decachlorobiphenyl	95	50-135	
2,4,5,6-Tetrachloro-m-Xylene	94	50-135	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Weiss Associates		Date Received:	12/04/14
2200 Powell Street, Suite 925		Work Order:	14-12-0426
Emeryville, CA 94608-1879		Preparation:	EPA 3510C
		Method:	EPA 8081A
		Units:	ng/L
Project: LRT 2014-2015 Annual Storm Water Sampling / 426-2026.01 Task 1.1.3			Page 1 of 4

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SW-3-120214	**14-12-0426-1-B**	**12/02/14 11:40**	**Aqueous**	**GC 44**	**12/09/14**	**12/18/14 06:50**	**141209L05**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Aldrin	ND	2.0	0.33	1.00	
4,4'-DDD	2.8	2.0	0.55	1.00	
4,4'-DDE	14	2.0	0.48	1.00	
4,4'-DDT	19	2.0	0.55	1.00	
Alpha Chlordane	ND	2.0	0.49	1.00	
Dieldrin	ND	2.0	0.55	1.00	
Gamma Chlordane	ND	2.0	0.49	1.00	
Toxaphene	ND	25	8.2	1.00	
Endrin	ND	2.0	0.31	1.00	
Gamma-BHC	ND	2.0	0.46	1.00	
Heptachlor	ND	2.0	0.36	1.00	
Heptachlor Epoxide	ND	2.0	0.34	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Decachlorobiphenyl	85	50-150	
2,4,5,6-Tetrachloro-m-Xylene	78	50-150	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Weiss Associates		Date Received:	12/04/14
2200 Powell Street, Suite 925		Work Order:	14-12-0426
Emeryville, CA 94608-1879		Preparation:	EPA 3510C
		Method:	EPA 8081A
		Units:	ng/L
Project: LRT 2014-2015 Annual Storm Water Sampling / 426-2026.01 Task 1.1.3			Page 2 of 4

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SW-3-120214-dup	**14-12-0426-2-B**	**12/02/14 11:45**	**Aqueous**	**GC 44**	**12/09/14**	**12/18/14 07:04**	**141209L05**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Aldrin	ND	1.9	0.31	1.00	
4,4'-DDD	2.5	1.9	0.53	1.00	
4,4'-DDE	14	1.9	0.46	1.00	
4,4'-DDT	19	1.9	0.53	1.00	
Alpha Chlordane	ND	1.9	0.47	1.00	
Dieldrin	ND	1.9	0.53	1.00	
Gamma Chlordane	ND	1.9	0.47	1.00	
Toxaphene	ND	24	7.9	1.00	
Endrin	ND	1.9	0.30	1.00	
Gamma-BHC	ND	1.9	0.44	1.00	
Heptachlor	ND	1.9	0.35	1.00	
Heptachlor Epoxide	ND	1.9	0.33	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Decachlorobiphenyl	99	50-150	
2,4,5,6-Tetrachloro-m-Xylene	95	50-150	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Weiss Associates		Date Received:	12/04/14
2200 Powell Street, Suite 925		Work Order:	14-12-0426
Emeryville, CA 94608-1879		Preparation:	EPA 3510C
		Method:	EPA 8081A
		Units:	ng/L
Project: LRT 2014-2015 Annual Storm Water Sampling / 426-2026.01 Task 1.1.3			Page 3 of 4

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SW-4/5/6/7-120214	**14-12-0426-3-B**	**12/02/14 11:30**	**Aqueous**	**GC 44**	**12/09/14**	**12/18/14 07:18**	**141209L05**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Aldrin	ND	1.9	0.32	1.00	
4,4'-DDD	ND	1.9	0.53	1.00	
4,4'-DDE	ND	1.9	0.46	1.00	
4,4'-DDT	3.5	1.9	0.54	1.00	
Alpha Chlordane	ND	1.9	0.48	1.00	
Dieldrin	ND	1.9	0.53	1.00	
Gamma Chlordane	ND	1.9	0.47	1.00	
Toxaphene	ND	24	8.0	1.00	
Endrin	ND	1.9	0.30	1.00	
Gamma-BHC	ND	1.9	0.45	1.00	
Heptachlor	ND	1.9	0.35	1.00	
Heptachlor Epoxide	ND	1.9	0.33	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Decachlorobiphenyl	100	50-150	
2,4,5,6-Tetrachloro-m-Xylene	98	50-150	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Weiss Associates		Date Received:	12/04/14
2200 Powell Street, Suite 925		Work Order:	14-12-0426
Emeryville, CA 94608-1879		Preparation:	EPA 3510C
		Method:	EPA 8081A
		Units:	ng/L
Project: LRT 2014-2015 Annual Storm Water Sampling / 426-2026.01 Task 1.1.3			Page 4 of 4

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-16-036-14**	**N/A**	**Aqueous**	**GC 44**	**12/09/14**	**12/17/14 22:31**	**141209L05**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Aldrin	ND	2.0	0.33	1.00	
4,4'-DDD	ND	2.0	0.55	1.00	
4,4'-DDE	ND	2.0	0.48	1.00	
4,4'-DDT	ND	2.0	0.55	1.00	
Alpha Chlordane	ND	2.0	0.49	1.00	
Dieldrin	ND	2.0	0.55	1.00	
Gamma Chlordane	ND	2.0	0.49	1.00	
Toxaphene	ND	25	8.2	1.00	
Endrin	ND	2.0	0.31	1.00	
Gamma-BHC	ND	2.0	0.46	1.00	
Heptachlor	ND	2.0	0.36	1.00	
Heptachlor Epoxide	ND	2.0	0.34	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Decachlorobiphenyl	88	50-150	
2,4,5,6-Tetrachloro-m-Xylene	89	50-150	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Quality Control - LCS/LCSD

Weiss Associates		Date Received:	12/04/14
2200 Powell Street, Suite 925		Work Order:	14-12-0426
Emeryville, CA 94608-1879		Preparation:	EPA 3510C
		Method:	EPA 8081A
Project: LRT 2014-2015 Annual Storm Water Sampling / 426-2026.01 Task 1.1.3			Page 1 of 2

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-529-762	**LCS**	**Aqueous**	**GC 51**	**12/08/14**	**12/09/14 16:16**	**141208L13**
099-12-529-762	**LCSD**	**Aqueous**	**GC 51**	**12/08/14**	**12/09/14 16:42**	**141208L13**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Alpha-BHC	0.5000	0.4071	81	0.3930	79	50-135	36-149	4	0-25	
Gamma-BHC	0.5000	0.4210	84	0.4183	84	50-135	36-149	1	0-25	
Beta-BHC	0.5000	0.3133	63	0.3111	62	50-135	36-149	1	0-25	
Heptachlor	0.5000	0.4299	86	0.4335	87	50-135	36-149	1	0-25	
Delta-BHC	0.5000	0.3584	72	0.3589	72	50-135	36-149	0	0-25	
Aldrin	0.5000	0.4051	81	0.4080	82	50-135	36-149	1	0-25	
Heptachlor Epoxide	0.5000	0.3995	80	0.4019	80	50-135	36-149	1	0-25	
Endosulfan I	0.5000	0.4163	83	0.4111	82	50-135	36-149	1	0-25	
Dieldrin	0.5000	0.4232	85	0.4168	83	50-135	36-149	2	0-25	
4,4'-DDE	0.5000	0.4104	82	0.4114	82	50-135	36-149	0	0-25	
Endrin	0.5000	0.4447	89	0.4512	90	50-135	36-149	1	0-25	
Endrin Aldehyde	0.5000	0.4173	83	0.4210	84	50-135	36-149	1	0-25	
4,4'-DDD	0.5000	0.4124	82	0.4144	83	50-135	36-149	0	0-25	
Endosulfan II	0.5000	0.4110	82	0.4115	82	50-135	36-149	0	0-25	
4,4'-DDT	0.5000	0.4232	85	0.4320	86	50-135	36-149	2	0-25	
Endosulfan Sulfate	0.5000	0.4081	82	0.4170	83	50-135	36-149	2	0-25	
Methoxychlor	0.5000	0.4331	87	0.4406	88	50-135	36-149	2	0-25	

Total number of LCS compounds: 17
Total number of ME compounds: 0
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS/LCSD

Weiss Associates		Date Received:	12/04/14
2200 Powell Street, Suite 925		Work Order:	14-12-0426
Emeryville, CA 94608-1879		Preparation:	EPA 3510C
		Method:	EPA 8081A
Project: LRT 2014-2015 Annual Storm Water Sampling / 426-2026.01 Task 1.1.3			Page 2 of 2

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-16-036-14	**LCS**	**Aqueous**	**GC 44**	**12/09/14**	**12/17/14 22:03**	**141209L05**
099-16-036-14	**LCSD**	**Aqueous**	**GC 44**	**12/09/14**	**12/17/14 22:17**	**141209L05**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Aldrin	50.00	46.36	93	50.88	102	50-150	33-167	9	0-25	
4,4'-DDD	50.00	45.69	91	51.91	104	50-150	33-167	13	0-25	
4,4'-DDE	50.00	45.52	91	51.41	103	50-150	33-167	12	0-25	
4,4'-DDT	50.00	45.18	90	51.34	103	50-150	33-167	13	0-25	
Alpha Chlordane	50.00	44.22	88	50.07	100	50-150	33-167	12	0-25	
Dieldrin	50.00	46.77	94	52.80	106	50-150	33-167	12	0-25	
Gamma Chlordane	50.00	45.25	90	51.17	102	50-150	33-167	12	0-25	
Endrin	50.00	45.50	91	52.09	104	50-150	33-167	14	0-25	
Gamma-BHC	50.00	47.51	95	52.28	105	50-150	33-167	10	0-25	
Heptachlor	50.00	50.34	101	54.16	108	50-150	33-167	7	0-25	
Heptachlor Epoxide	50.00	44.63	89	50.22	100	50-150	33-167	12	0-25	

Total number of LCS compounds: 11
Total number of ME compounds: 0
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

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RPD: Relative Percent Difference. CL: Control Limits

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Sample Analysis Summary Report

Work Order: 14-12-0426

Method	Extraction	Chemist ID	Instrument	Analytical Location
EPA 8081A	EPA 3510C	421	GC 44	1
EPA 8081A	EPA 3510C	669	GC 51	1

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Glossary of Terms and Qualifiers

Work Order: 14-12-0426 Page 1 of 1

Qualifiers	Definition
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

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Chain of Custody Record

CalScience Environmental Lab
5063 Commercial Circle, Suite H
Concord, CA 94520
Phone: 925-689-9022

Please send analytic results, electronic deliverables and the original chain-of-custody form to:
labresults@weiss.com
mec@weiss.com
sab@weiss.com

INSTRUCTIONS FOR LAB PERSONNEL:
GeoTracker EDF required? ☐ Yes ☒ No
Equis 4-file EDWEDD required? ☒ Yes ☐ No
Specify analytic/prep method and detection limit in report.
Notify us of any anomalous peaks in GC or other scans.
Call immediately with any questions or problems.

14-12-0426

Client Contact	Project Manager: Scott Bourne	Protocol ID/path: J:\Levin Richmond\03b_Sampling	COC Number:
Weiss Associates	Project ID: 426-2026.01 Task 1.1.3		
2200 Powell Street, Suite 925	Sampled by: M Cunningham		Page____ of ____
Emeryville, CA 94608	Sample date(s): 12/2/14		
(510) 450-6000 Phone	Analysis Turnaround Time:		SDG number:
(510) 547-5043 FAX	Standard		
Job Name: LRT 2014-2015 Annual Storm Water Sampling	(Specify Days or Hours)		
Address: Levin Richmond Terminal, 402 Wright Avenue, Richmond, CA 94804			

Lab ID	Sample Identification	Sample Date	Sample Time	Sample Matrix	# of Cont.	Analyte (Method ID): Pesticides (EPA 8081A)
1	SW-3-120214	12/2/14	1140	W	2	✓
2	SW-3-120214-dup	↓	1145	↓	2	✓
3	SW-4/5/6/7-120214	↓	1130	↓	2	✓
					Field Filtered (X):	
					Preservation Used: 1= Ice, 2= HCl; 3= H_2SO_4; 4=HNO_3; 5=NaOH; 6= Other	1

Sample Specific Notes:

Special Instructions/QC Requirements & Comments: Level II Report. Report with reporting limit and method detection limit. Please use agreed upon analytical methods for lowest detection limits.

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
M Cunningham	Weiss	12/3/14 1235	Tom O'Malley	ECI	12/3/14 1235
Tom O'Malley TO GSD	ECI	12/3/14 1730			
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
				ECI	12/4/14 1040

☒ = Samples released to a secured, locked area. ● = Samples received from a secured, locked area

GSO

< WebShip > > > > >

800-322-5555 www.gso.com

0426

Ship From:
ALAN KEMP
CAL SCIENCE- CONCORD
5063 COMMERCIAL CIRCLE #H
CONCORD, CA 94520

Ship To:
SAMPLE RECEIVING
CEL
7440 LINCOLN WAY
GARDEN GROVE, CA 92841

COD:
$0.00

Reference:
WEISS, PAC ECORISK,

Delivery Instructions:

Signature Type:
SIGNATURE REQUIRED

Tracking #: 526296005

NPS

ORC

A

GARDEN GROVE

D92845A

31443783

Print Date : 12/03/14 16:16 PM

Package 1 of 1

Send Label To Printer | ☑ Print All | Edit Shipment | Finish

LABEL INSTRUCTIONS:

Do not copy or reprint this label for additional shipments - each package must have a unique barcode.

STEP 1 - Use the "Send Label to Printer" button on this page to print the shipping label on a laser or inkjet printer.

STEP 2 - Fold this page in half.

STEP 3 - Securely attach this label to your package, do not cover the barcode.

STEP 4 - Request an on-call pickup for your package, if you do not have scheduled daily pickup service or Drop-off your package at the nearest GSO drop box. Locate nearest GSO dropbox locations using this link.

ADDITIONAL OPTIONS:

Send Label Via Email | Create Return Label

TERMS AND CONDITIONS:

By giving us your shipment to deliver, you agree to all the service terms and conditions described in this section.
Our liability for loss or damage to any package is limited to your actual damages or $100 whichever is less, unless you pay for and declare a higher authorized value. If you declare a higher value and pay the additional charge, our liability will be the lesser of your declared value or the actual value of your loss or damage. In any event, we will not be liable for any damage, whether direct, incidental, special or consequential, in excess of the declared value of a shipment whether or not we had knowledge that such damage might be incurred including but not limited to loss of income or profit. We will not be liable for your acts or omissions, including but not limited to improper or insufficient packaging, securing, marking or addressing. Also, we will not be liable if you or the recipient violates any of the terms of our agreement. We will not be liable for loss, damage or delay caused by events we cannot control, including but not limited to acts of God, perils of the air, weather conditions, act of public enemies, war, strikes, or civil commotion. The highest declared value for our GSO Priority Letter or GSO Priority Package is $500. For other shipments the highest declared value is $10,000 unless your package contains items of "extraordinary value", in which case the highest declared value we allow is $500. Items of "extraordinary value" include, but or not limited to, artwork, jewelry, furs, precious metals, tickets, negotiable instruments and other items with intrinsic value.

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WORK ORDER #: 14-12-0426

SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: Weiss

DATE: 12/04/14

TEMPERATURE: Thermometer ID: SC2 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 2.1 °C - 0.2 °C (CF) = 1.9 °C ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____)

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ Received at ambient temperature, placed on ice for transport by Courier.

Ambient Temperature: ☐ Air ☐ Filter Checked by: 15

CUSTODY SEALS INTACT:

☑ Cooler ☐ _____ ☐ No (Not Intact) ☐ Not Present ☐ N/A Checked by: 15

☐ Sample ☐ _____ ☐ No (Not Intact) ☑ Not Present Checked by: 592

SAMPLE CONDITION:	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑	☐	☐
☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels.			
☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished.			
Sampler's name indicated on COC	☑	☐	☐
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and good condition	☑	☐	☐
Proper containers and sufficient volume for analyses requested	☑	☐	☐
Analyses received within holding time	☑	☐	☐
Aqueous samples received within 15-minute holding time			
☐ pH ☐ Residual Chlorine ☐ Dissolved Sulfides ☐ Dissolved Oxygen	☐	☐	☑
Proper preservation noted on COC or sample container	☑	☐	☐
☐ Unpreserved vials received for Volatiles analysis			
Volatile analysis container(s) free of headspace	☐	☐	☑
Tedlar bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE:

Solid: ☐4ozCGJ ☐8ozCGJ ☐16ozCGJ ☐Sleeve (_____) ☐EnCores® ☐TerraCores® ☐_____

Aqueous: ☐VOA ☐VOAh ☐VOAna_2 ☐125AGB ☐125AGBh ☐125AGBp ☑1AGB ☐1AGBna_2 ☐1AGBs ☐500AGB ☐500AGJ ☐500AGJs ☐250AGB ☐250CGB ☐250CGBs ☐1PB ☐1PBna ☐500PB ☐250PB ☐250PBn ☐125PB ☐125PBznna ☐100PJ ☐100PJna_2 ☐_____ ☐_____ ☐_____

Air: ☐Tedlar® ☐Canister **Other:** ☐_____ **Trip Blank Lot#:**_____ Labeled/Checked by: 592

Container: C: Clear A: Amber P: Plastic G: Glass J: Jar B: Bottle Z: Ziploc/Resealable Bag E: Envelope Reviewed by: [illegible]

Preservative: h: HCL n: HNO_3 na_2: $Na_2S_2O_3$ na: NaOH p: H_3PO_4 s: H_2SO_4 u: Ultra-pure znna: $ZnAc_2$+NaOH f: Filtered Scanned by: [illegible]

SOP T100_090 (06/02/14)

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Pleasanton
1220 Quarry Lane
Pleasanton, CA 94566
Tel: (925)484-1919

TestAmerica Job ID: 720-62889-1
Client Project/Site: LRT 2014-2015 Annual Stormwater Sampling

For:
Weiss Associates
2200 Powell Street
Suite 925
Emeryville, California 94608

Attn: Mr. Scott Bourne

Authorized for release by:
2/24/2015 3:33:47 PM

Micah Smith, Project Manager II
(925)484-1919
micah.smith@testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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720-62889

Chain of Custody Record

TestAmerica
1220 Quarry Lane
Pleasanton, CA 94566
Phone: 925-484-1919 ext.137

Please send analytic results, electronic deliverables and the orignal chain-of-custody form to:
labresults@weiss.com
mec@weiss.com
sab@weiss.com

INSTRUCTIONS FOR LAB PERSONNEL:
GeoTracker EDF required? ☐ Yes ☒ No
Equis 4-file EDWEDD required? ☒ Yes ☐ No
Specify analytic/prep method and detection limit in report.
Notify us of any anomalous peaks in GC or other scans.
Call immediately with any questions or problems.

2/24/2015

159238

Client Contact		Project Manager: Scott Bourne	Protocol ID/path: J:\Levin Richmond\03b_Sampling	COC Number:
Weiss Associates		Project ID: 426-2026.01 Task 1.1.3		
2200 Powell Street, Suite 925		Sampled by: MEL		Page 1 of 1
Emeryville, CA 94608		Sample date(s): 2/6/15		
(510) 450-6000	Phone	**Analysis Turnaround Time:**		SDG number:
(510) 547-5043	FAX			
Job Name: LRT 2014-2015 Annual Storm Water Sampling		Standard		
Address: Levin Richmond Terminal, 402 Wright Avenue, Richmond, CA 94804		(Specify Days or Hours)		

720-62889 Chain of Custody

Lab ID	Sample Identification	Sample Date	Sample Time	Sample Matrix	# of Cont.	pH (EPA 9040B) / Conductance	Total Suspended Solids (SM 2540D)	Oil & Grease (EPA 1664A SGT-HEM)	Total Metals- Al,Cu, Fe, Ni, Pb, Zn (EPA 200.8 ICP-MS)	Sample Specific Notes:
	TS1-E- 020615	2/6/15	1350	W	8	✓	✓	✓	✓	MS/MSD for O&G + metals
	~~SW-3-~~									
	~~SW-4/5/6/7-~~									
	~~SW-4/5/6/7-DUP-~~									
	SW-11- 020615	2/6/15	1413	W	5	✓	✓	✓	✓	
	SW-12- 020615	2/6/15	1405	W	5	✓	✓	✓	✓	
	~~SHEET-1-~~									
	~~SHEET-2-~~									
					Field Filtered (X):					
					Preservation Used: 1=Ice, 2=HCl; 3=H_2SO_4; 4=HNO_3; 5=NaOH; 6=Other	1	1	1, 2	1, 4	

Special Instructions/QC Requirements & Comments: Level II Report. Report with reporting limit and method detection limit. Analyze and report only the metals listed above (Al, Cu, Fe, Ni, Pb, and Zn).

Relinquished by:	Company:	Date/Time	Received by:	Company:	Date/Time
Mary Cunningham	Weiss	2/9/15 1030		TA	2-9-15 1030
	TA	2-9-15 1800		TRP	2/9/15 1800

☒ = Samples released to a secured, locked area. ● = Samples received from a secured, locked area

2.8°C
TGS 2/9/15

Page 18 of 22

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cel analytical, inc.

ELAP#2647

Client:
Scott Bourne

Weiss Associates
2200 Powell Street, Suite 925
Emeryville, CA94608
Phone:(510) 450-6000
Fax: (510) 547-5043
labresults@weiss.com
mec@weiss.com
sab@weiss.com

Work Order: 4435
Project name:LRT 2014-2015 Annual Storm Water Sampling
Lab ID#:4435
Sampling date:2/06/15
Sample received date:2/11/15 @ 9:35
Analysis Date: 2/11/15
Reporting Date: 2/18/15
Matrix: Water

Case Narrative

This report presents the results of the analysis of the Water sample received on 2/11/2015 and assigned the listed Cel Analytical work order number 4435 (CelA 4435).

Analysis were conducted according to StormKlear HaloSource HS-SOP-5054-02 methods validated in-house. All QA/QC requirements were met and no anomalies associated with the analysis of these sample(s) were observed.

Reviewed by:

Yeggie Dearborn, Ph.D.
Laboratory Director

cel analytical, inc.

Scott Bourne

Weiss Associates
2200 Powell Street, Suite 925
Emeryville, CA94608
Phone:(510) 450-6000
Fax: (510) 547-5043
labresults@weiss.com
mec@weiss.com
sab@weiss.com

Project name:LRT 2014-2015 Annual Storm Water Sampling
Lab ID#:4435
Sampling date:2/06/15
Sample received date:2/11/15 @ 9:35
Analysis Date: 2/11/15
Reporting Date: 2/18/15
Matrix: Water

Laboratory Report

Qualitative/Colorimetric Analysis

Residual Chitosan

		Results
Lab ID	**Sample ID-Description/Date & Time**	**Risidual Chitosan (mg/L)**
4435-01	TS1-E-020615 2/6/15 13:50	Non-Detected

Parameter	Laboratory Reporting Limit	Method
Residual Chitosan	0.1mg/L	HS-SOP-5054-02

Reveiwed by: Yeggie Dearborn Ph.D.
Lab Director

cel analytical, inc.

Scott Bourne

Weiss Associates
2200 Powell Street, Suite 925
Emeryville, CA94608
Phone:(510) 450-6000
Fax: (510) 547-5043
labresults@weiss.com
mec@weiss.com
sab@weiss.com

Project name:LRT 2014-2015 Annual Storm Water Sampling
Lab ID#:4435
Sampling date:2/06/15
Sample received date:2/11/15 @ 9:35
Analysis Date: 2/11/15
Reporting Date: 2/18/15
Matrix: Water

Quality Control Report

Residual Chitosan

Method: HS-SOP-5054-02
Reporting Limit: 0.1 mg/L
Quality control analysis

Matrix	Sample Results ppm
Control Sample *	Detected ≥0.1 mg/L
Blank	Non-Detected

*Neat Product used as coagulant and diluted to achieve 0.1 mg/L

Reviewed By:Yeggie Dearborn, Ph.D.
Laboratory Director

Chain of Custody Record

4435

CEL Analytical
82 Mary Street, Suite #2
San Francisco, CA 94103
Phone: (415) 882-1690

Please send analytic results, electronic deliverables and the original chain-of-custody form to:
labresults@weiss.com
mec@weiss.com
sab@weiss.com

INSTRUCTIONS FOR LAB PERSONNEL:
GeoTracker EDF required? ☐ Yes ☒ No
Equis 4-file EDWEDD required? ☒ Yes ☐ No
Specify analytic/prep method and detection limit to report.
Notify us of any anomalous peaks in GC or other scans.
Call immediately with any questions or problems.

Client Contact		Project Manager: Scott Bourne	Protocol ID/path: J:\Levin Richmond\03a_Data Management\00_Field Sampling\00a_Forms\	COC Number:
Weiss Associates		Project ID: 426-2026.01 Task 1.1.3		
2200 Powell Street, Suite 925		Sampled by: MEC		Page 1 of 1
Emeryville, CA 94608		Sample date(s): 2/6/15		
(510) 450-6000	Phone	Analysis Turnaround Time:		SDG number:
(510) 547-5043	FAX	Standard		
Job Name: LRT 2014-2015 Annual Storm Water Sampling		(Specify Days or Hours)		
Address: Levin Richmond Terminal, 402 Wright Avenue, Richmond, CA 94804				Sample Specific Notes:

Lab ID	Sample Identification	Sample Date	Sample Time	Sample Matrix	# of Cont.	Analyte (Method ID): Residual Chitosan
	TS1-E- 020615	2/6/15	1350	W	1	X
					Field Filtered (X):	
					Preservation Used: 1= Ice, 2= HCl; 3= H_2SO_4; 4=HNO_3; 5=NaOH; 6= Other	1

Special Instructions/QC Requirements & Comments: Level II Report. Report with reporting limit and method detection limit. ~~Analyze and report only the metals listed above (Al, Cu, Fe, Ni, Pb, and Zn).~~
Detection limit for residual chitosan (Halo Source Liquifloc) is 0.1 mg/L. Sample of neat product (1% Liquifloc) is included for reference

Relinquished by	Company	Date/Time	Received by	Company	Date/Time
[signature] ☒	WEISS	2/9/15 0900	[signature] ●	Cal A	2-11-15 9:35
☐			●	5-7°C	
☐			●		

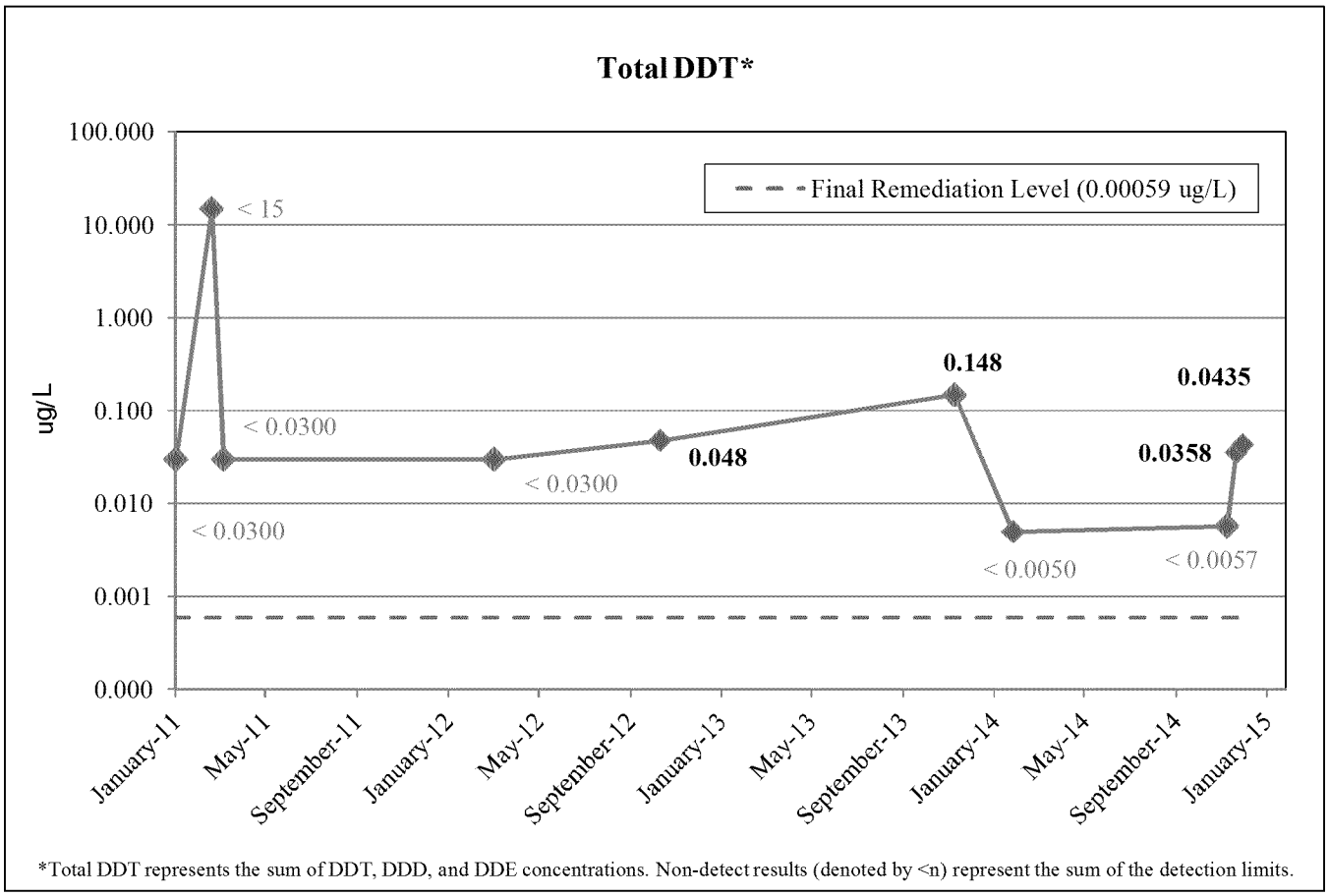
☒ = Samples released to a secured, locked area. ● = Samples received from a secured, locked area

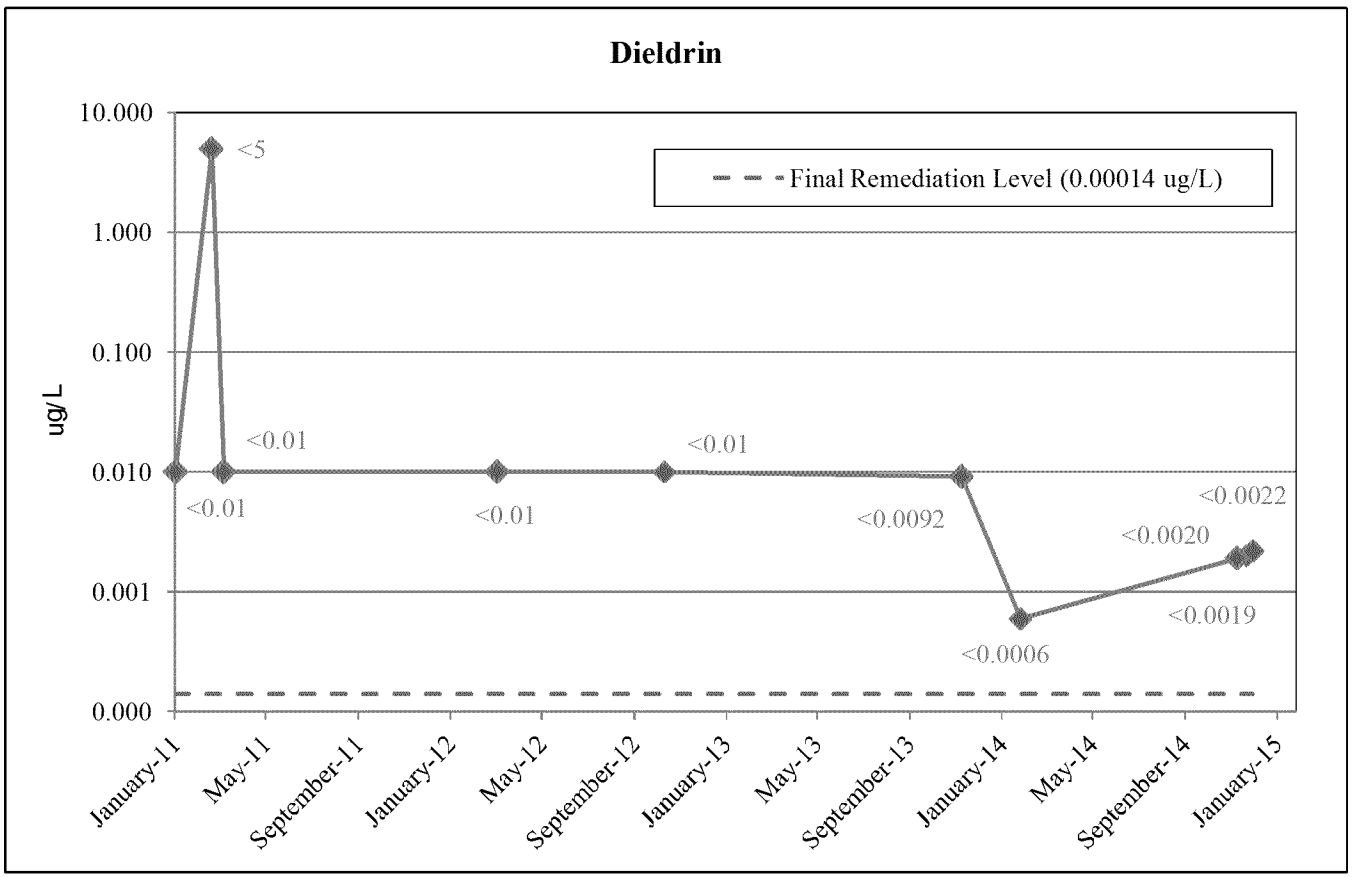
Weiss Associates

APPENDIX C

STORM WATER PESTICIDE CONCENTRATION TREND CHARTS FOR DDT AND DIELDRIN

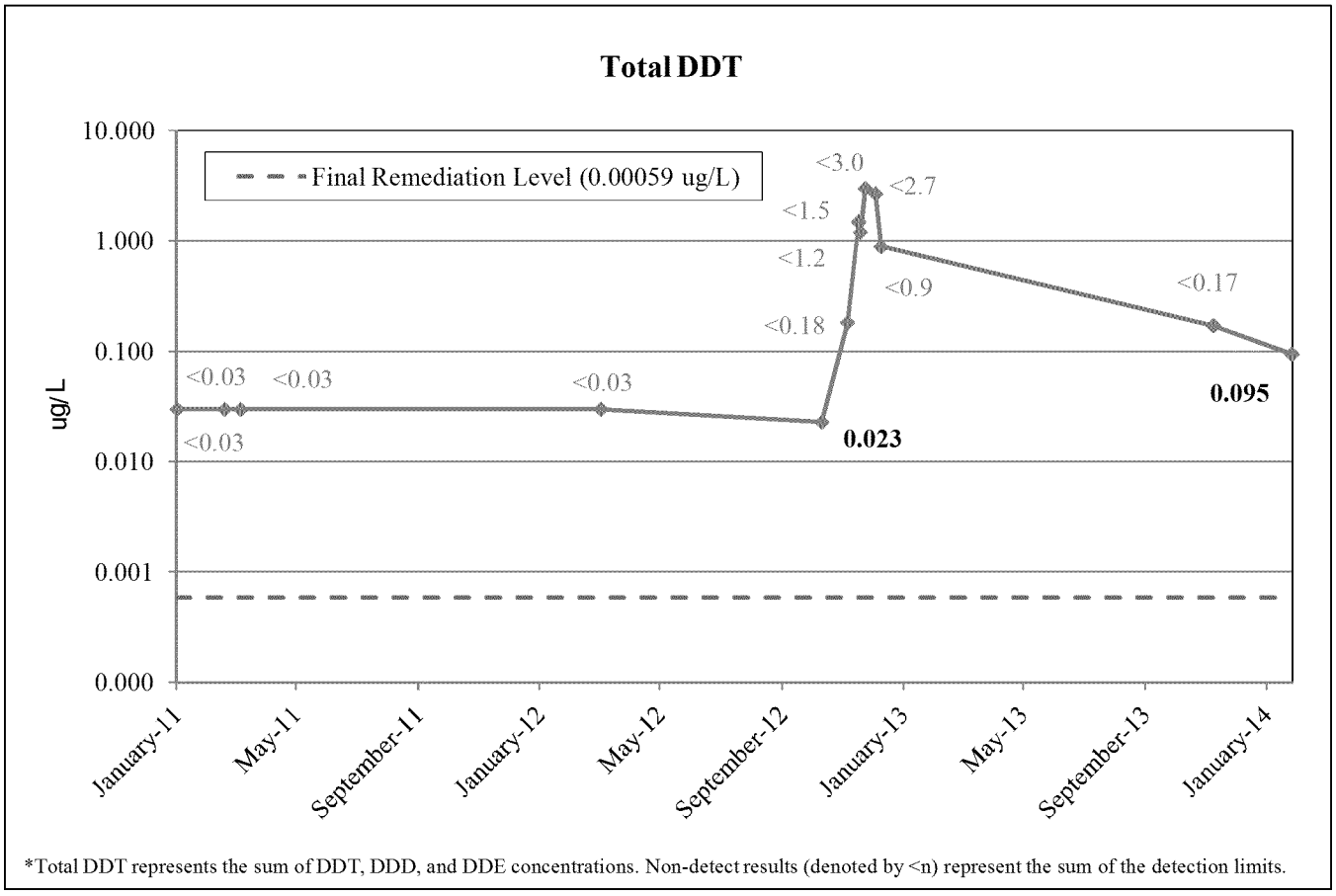
SW-3 Pesticide Concentration Trend Charts
2011-2015



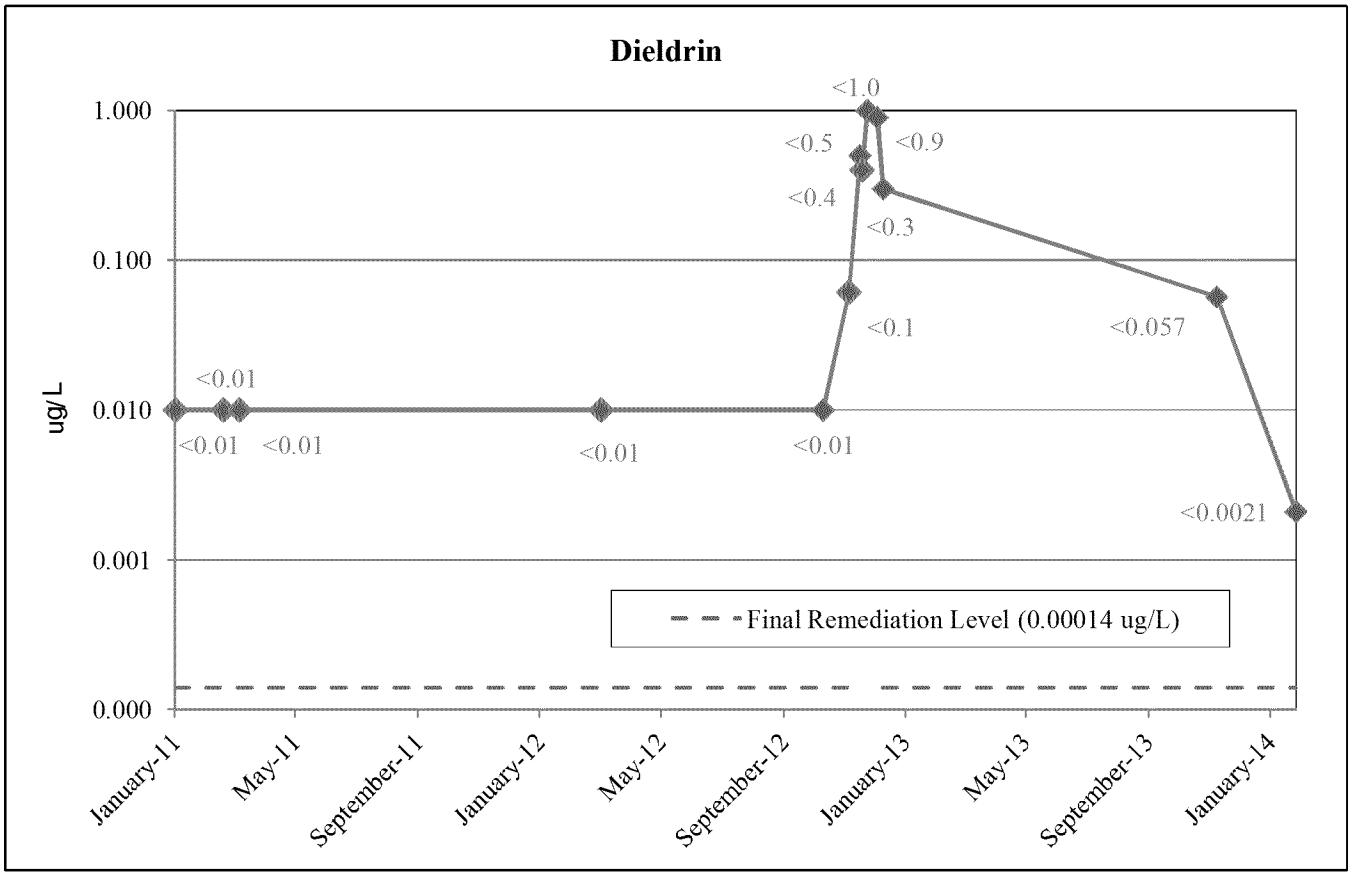


Note:
Data prior to February 2013 represents samples collected by previous consultants.

SW-4 Pesticide Concentration Trend Charts
2011-2014

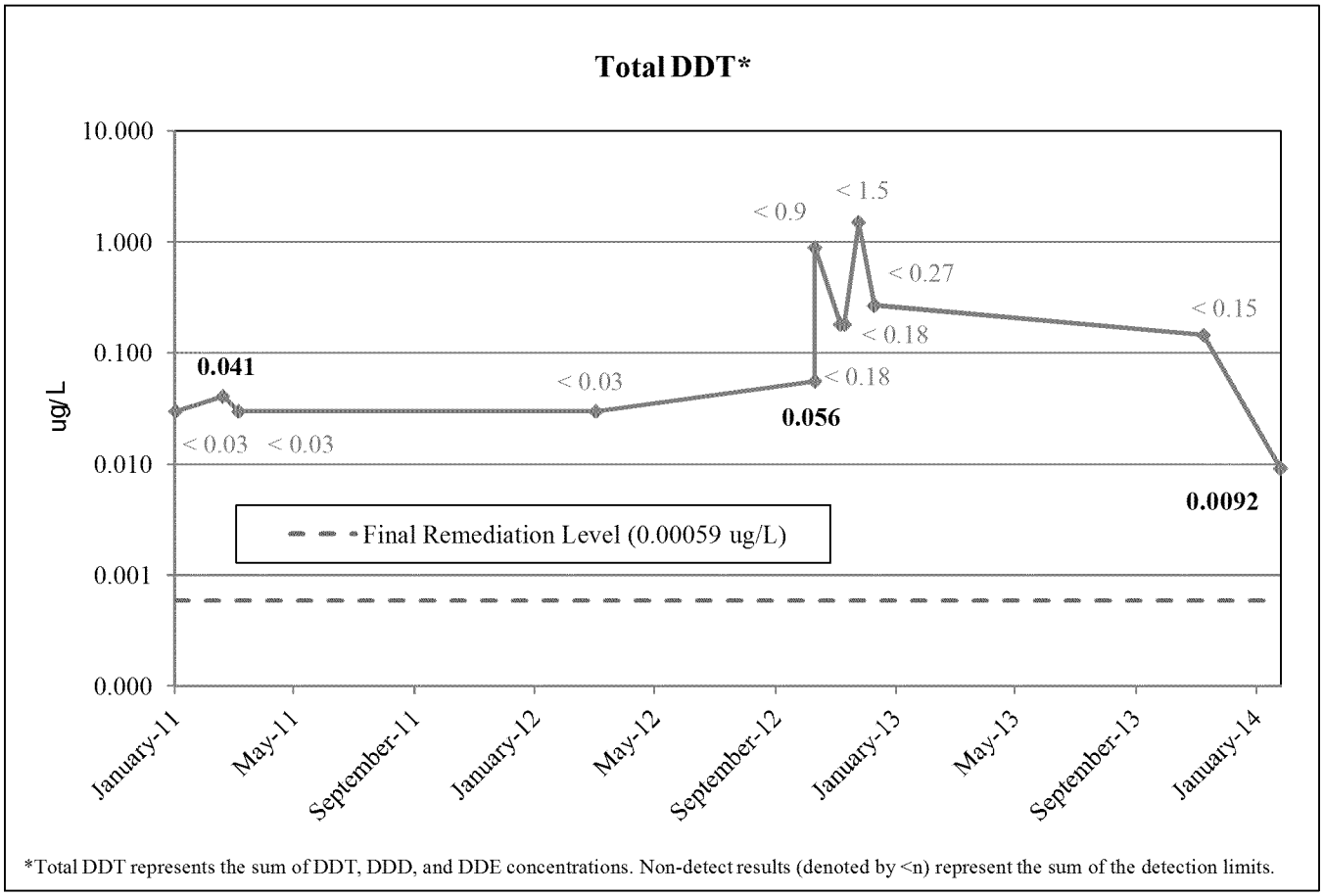


*Total DDT represents the sum of DDT, DDD, and DDE concentrations. Non-detect results (denoted by <n) represent the sum of the detection limits.

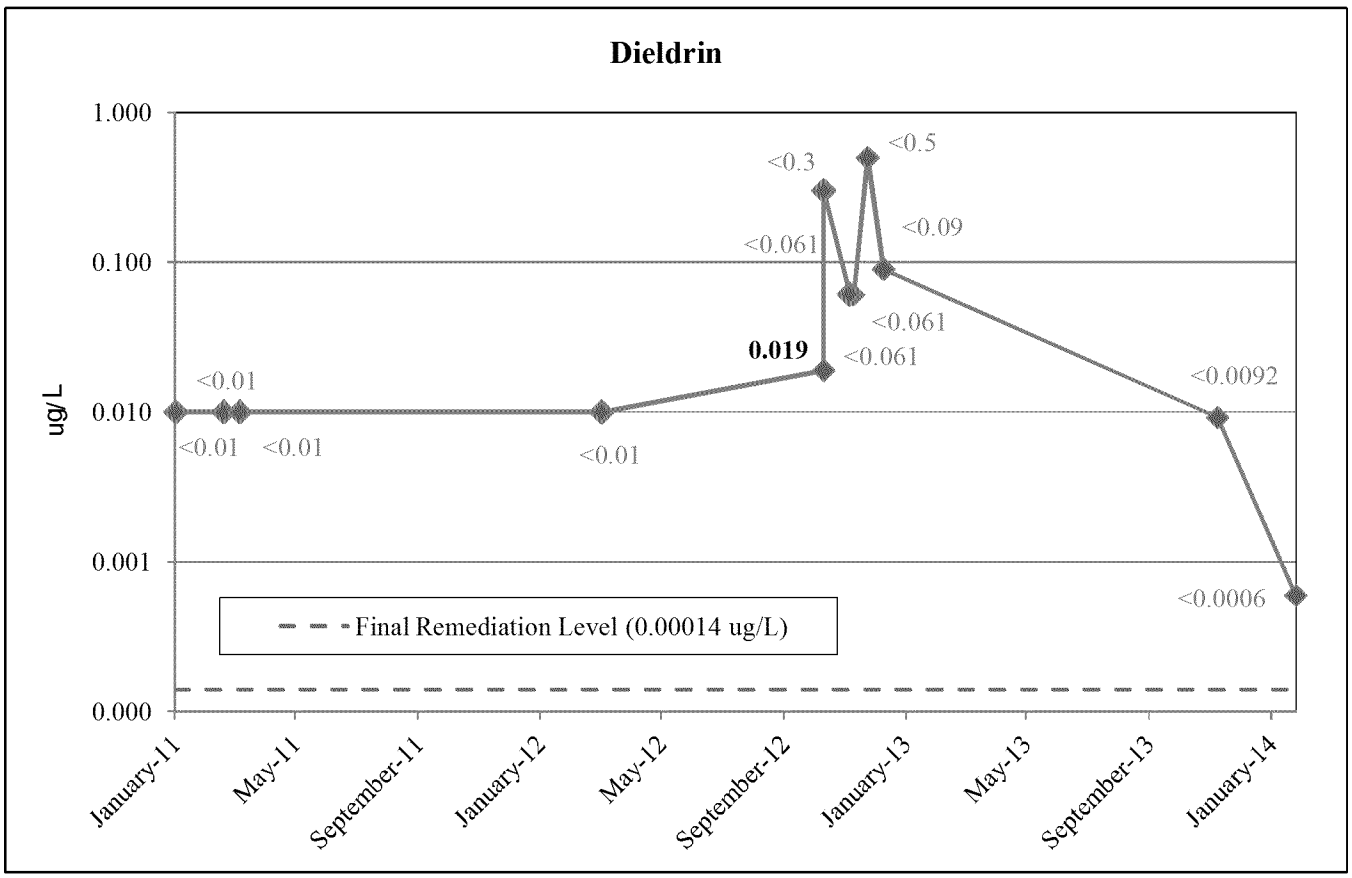


Note:
Data prior to February 2013 represents samples collected by previous consultants.

SW-5 Pesticide Concentration Trend Charts
2011-2014

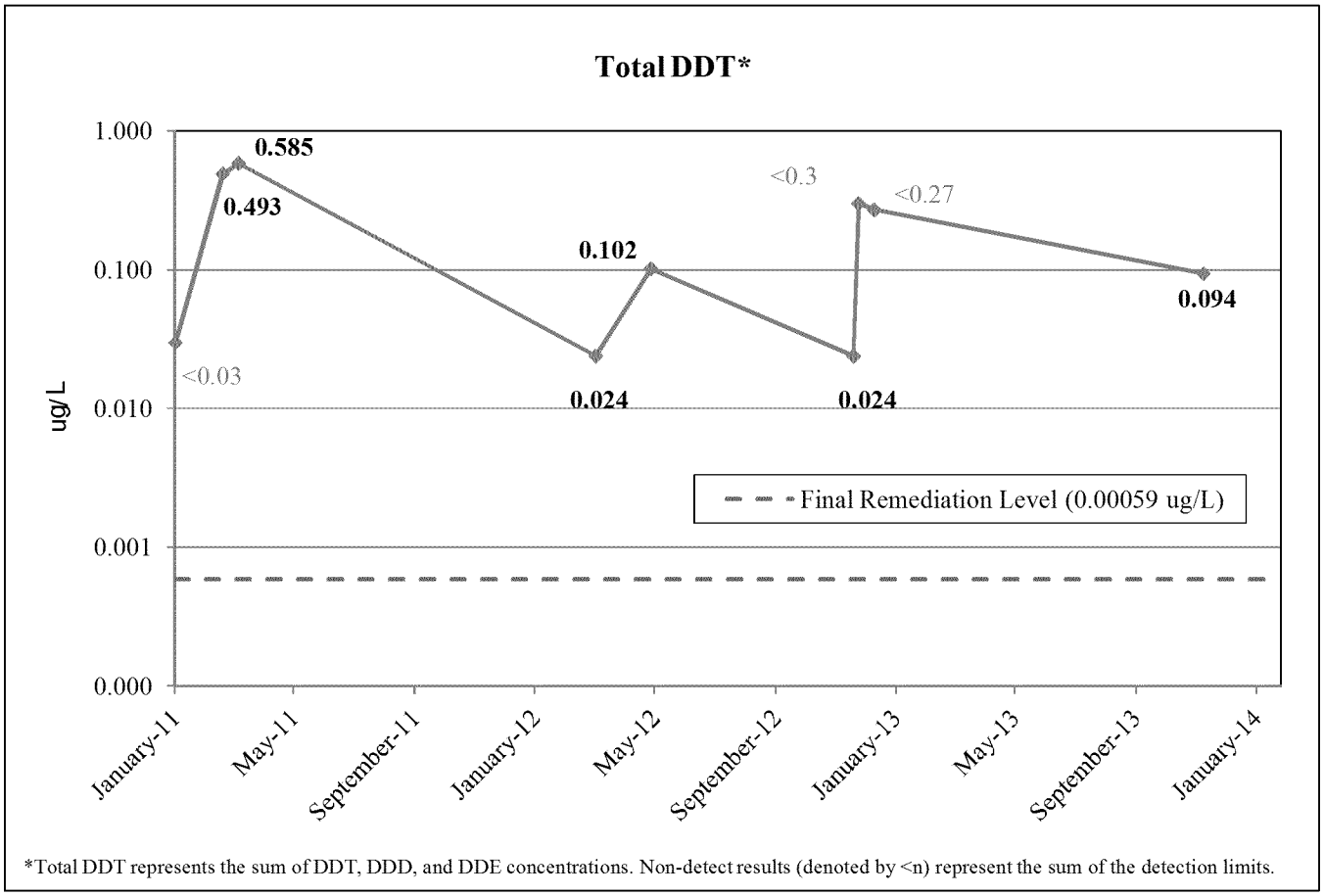


*Total DDT represents the sum of DDT, DDD, and DDE concentrations. Non-detect results (denoted by <n) represent the sum of the detection limits.

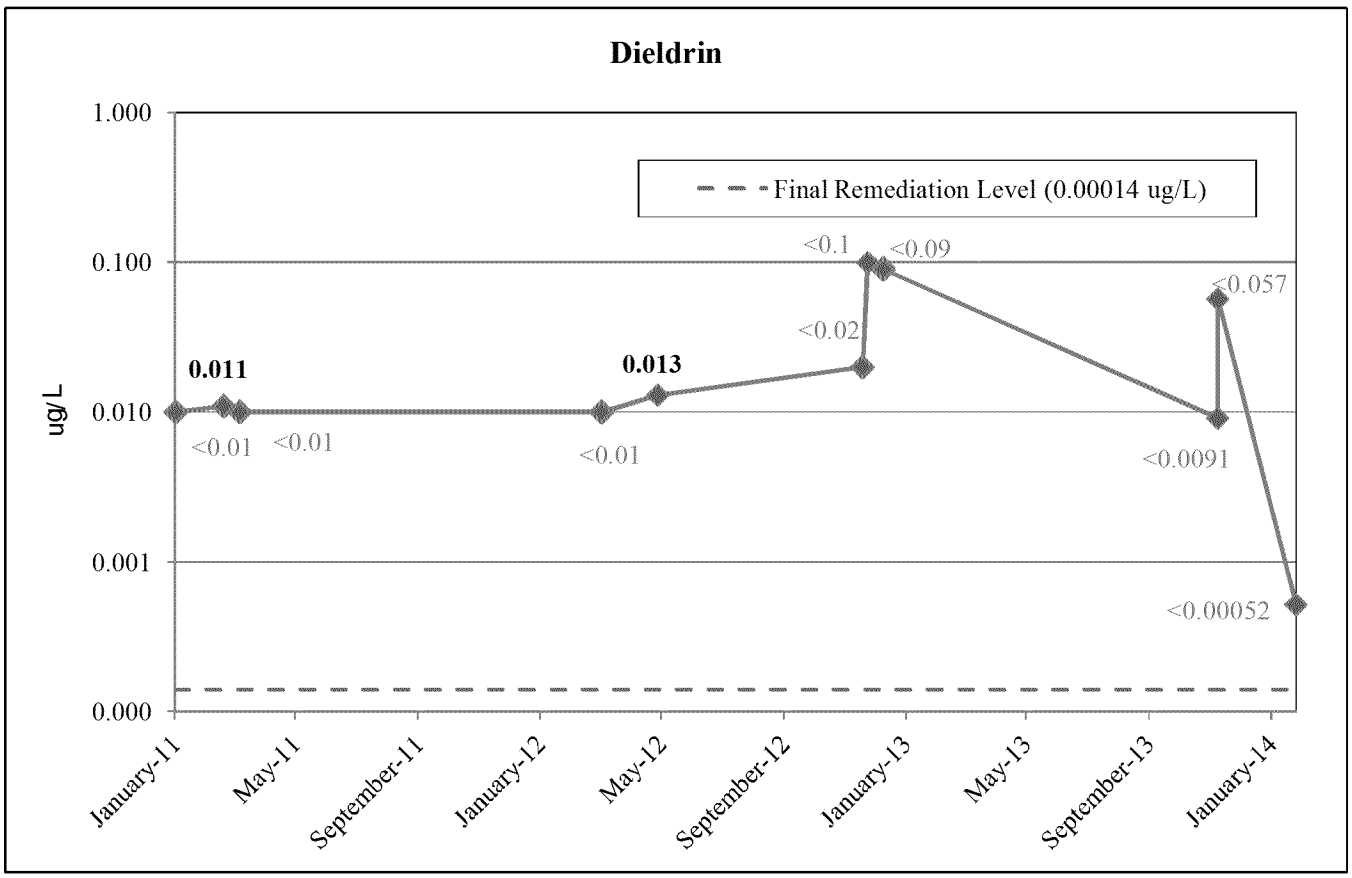


Note:
Data prior to February 2013 represents samples collected by previous consultants.

SW-6 Pesticide Concentration Trend Charts
2011-2014

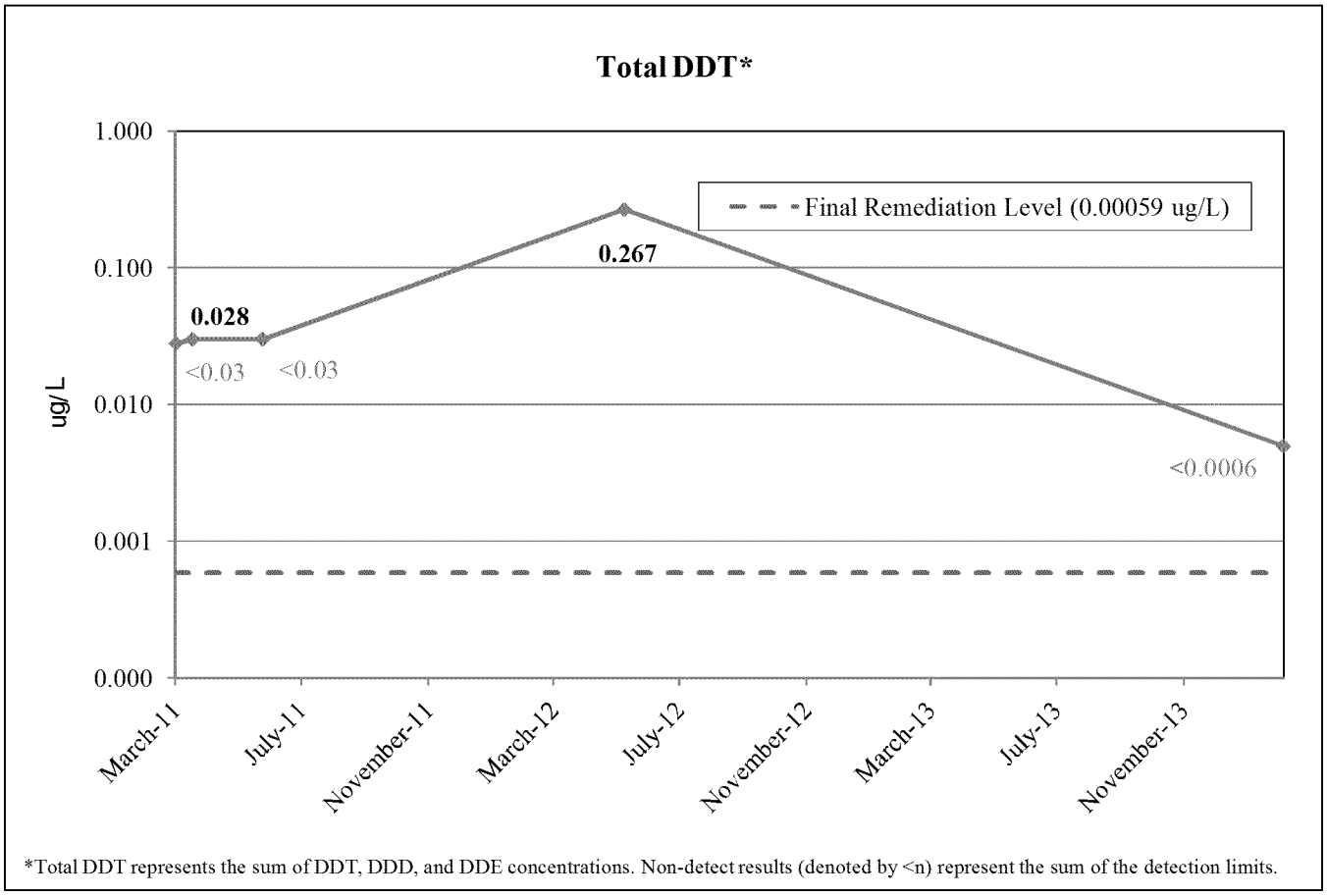


*Total DDT represents the sum of DDT, DDD, and DDE concentrations. Non-detect results (denoted by <n) represent the sum of the detection limits.

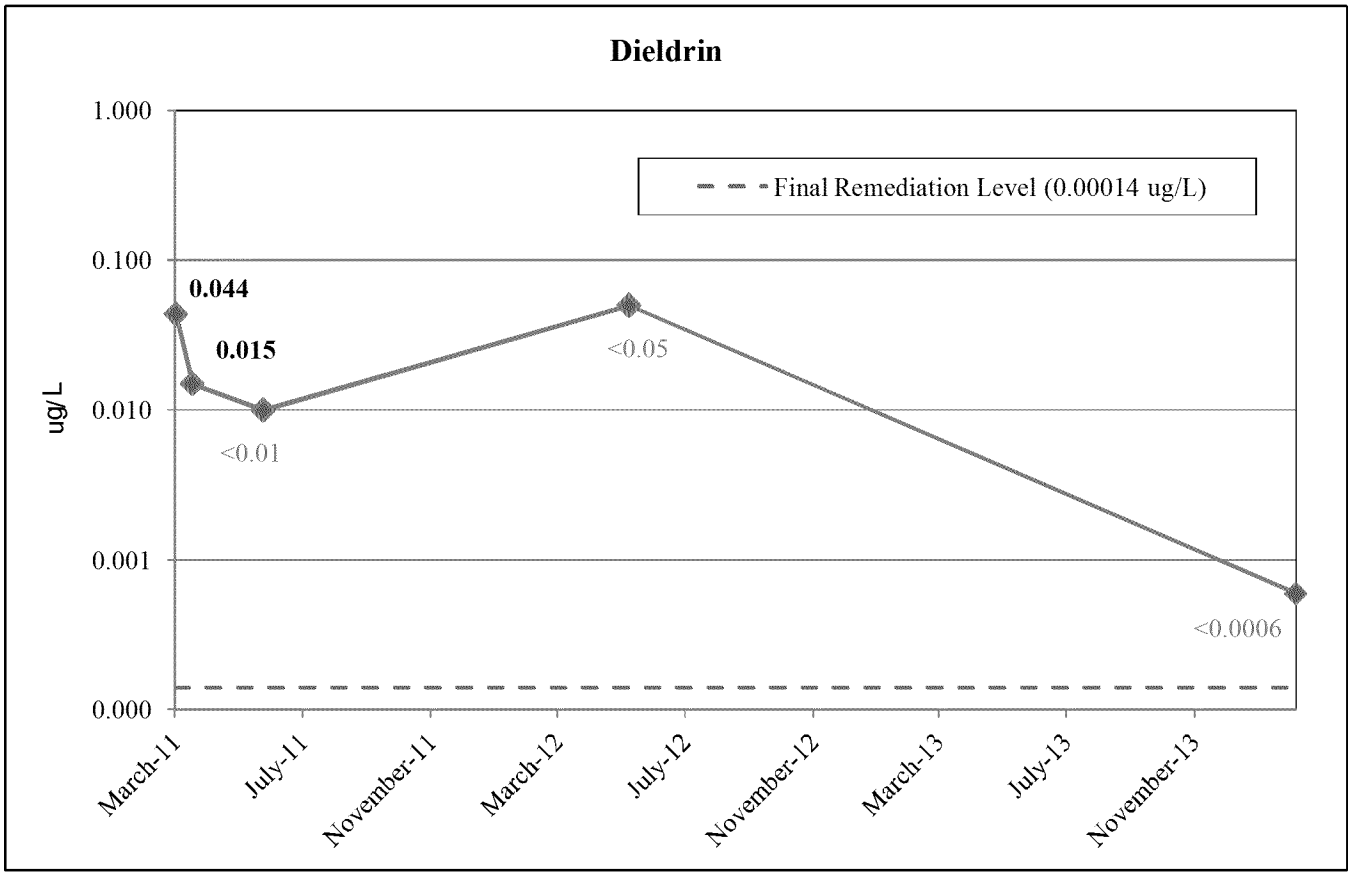


Note:
Data prior to February 2013 represents samples collected by previous consultants.

SW-7 Pesticide Concentration Trend Charts
2011-2014

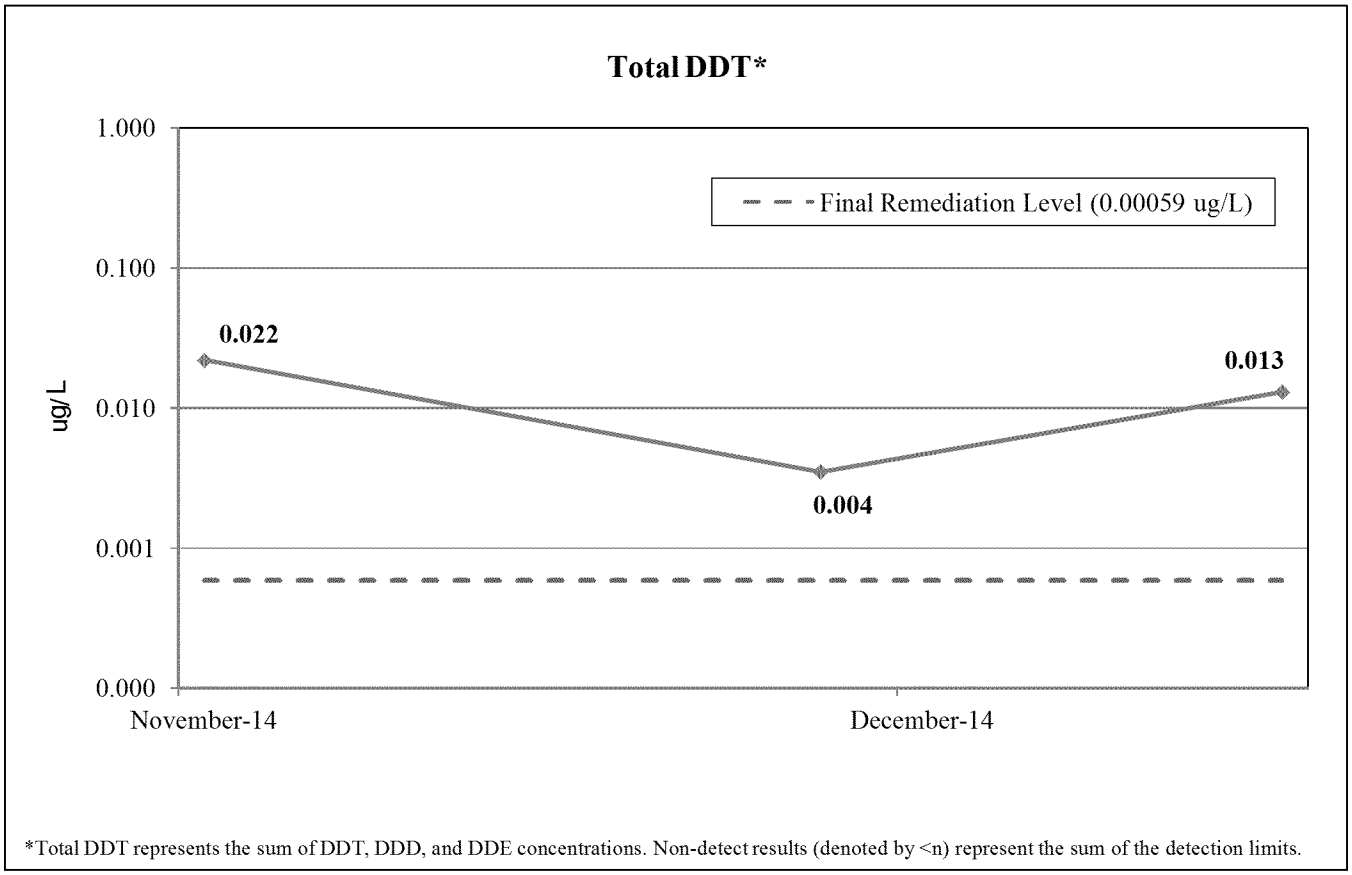


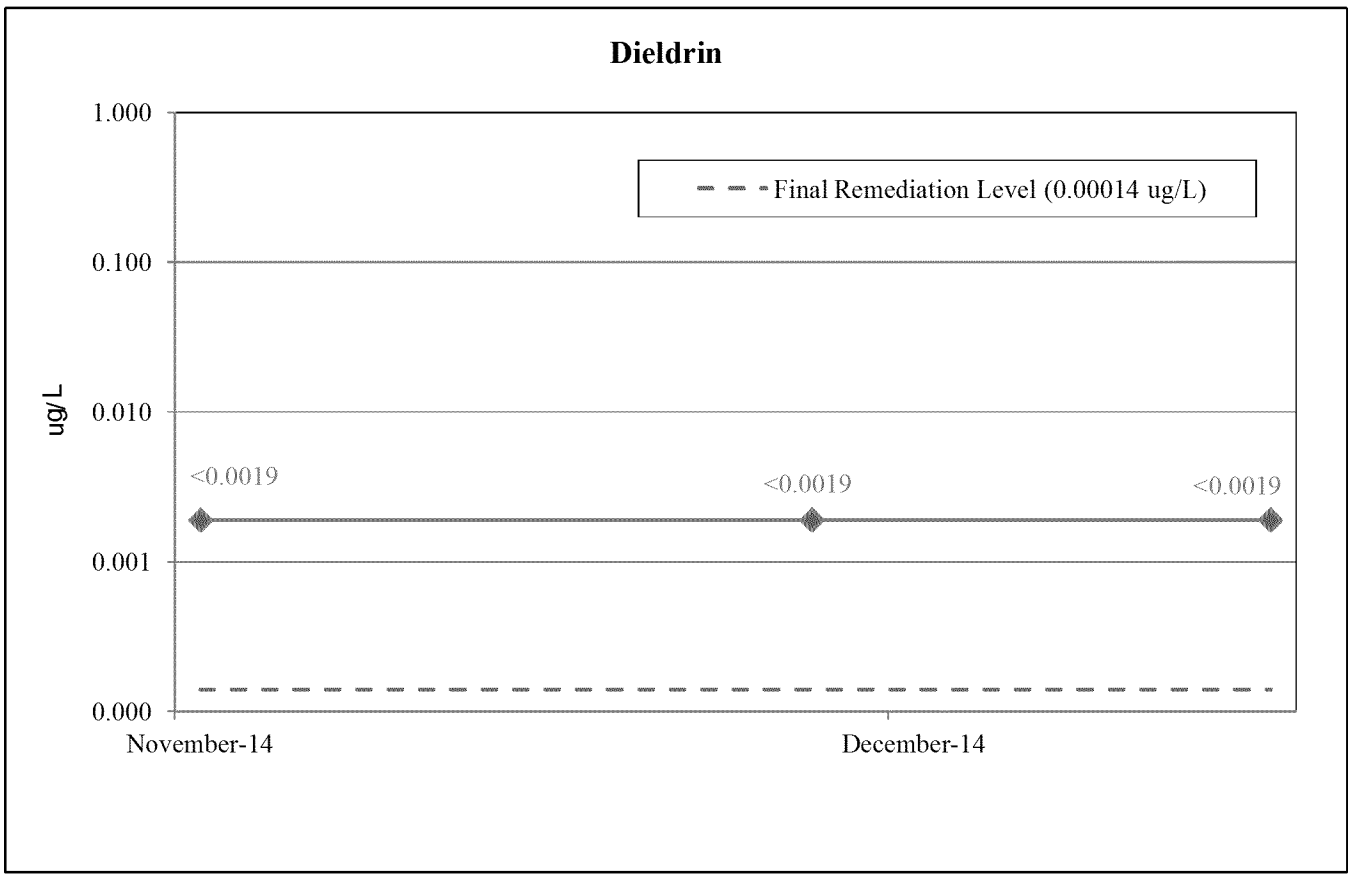
*Total DDT represents the sum of DDT, DDD, and DDE concentrations. Non-detect results (denoted by <n) represent the sum of the detection limits.



Note:
Data prior to February 2013 represents samples collected by previous consultants.

SW-4 through SW-7 Pesticide Concentration Trend Charts
2014-2015





Note:
Data prior to February 2013 represents samples collected by previous consultants.

APPENDIX D

UPLAND CAPPING SYSTEM INSPECTION FORM

Former United Heckathorn Superfund Site Upland Capping System Inspection Form
Levin Richmond Terminal, 402 Wright Avenue, Richmond, California

I. General Information

Site: Former United Heckathorn Superfund Site, Levin Richmond Terminal
Address: 402 Wright Avenue, Richmond, CA
Inspectors: Scott Bourne, PE; Brian Bandy
Organization: Weiss Associates
Date and time of inspection: June 15, 2015; 10:15

II. Upland Area Concrete Cap, Gravel Cover, and Drainage System Observations

Note significant cracks, holes, penetrations, damage, settlement, or any exposure of underlying soil in any component of the capping system.

North Main Terminal (SW-3)

	Yes	No	N/A	Comments
Are concrete cap surfaces in adequate condition to promote effectiveness of the cap?	X			Minor cracks noted.
Are gravel cover surfaces in adequate condition to promote effectiveness of the cap?	X			
Is storm water drainage infrastructure in adequate condition to prevent exposure of underlying soil to runoff?	X			
Are corrective actions required?		X		Continued observation recommended. Sealing of pavement cracks and joints noted in some locations.
Attach a photograph of areas requiring corrective action.			X	

Describe any recent repairs/maintenance:

No recent corrective actions to concrete cap or gravel cover noted in SW-3 area.

Describe conditions and locations of the capping system which require attention:

No material breach or areas with significant deterioration and a potential for exposure of the underlying subgrade were identifed in this area. See photos 1-5.

Describe corrective actions required and their date(s) of implementation:

Continue to monitor for minor cracks to see if their conditions worsen or if they continue to propagate.

Signature: Scott Bourne

Date: 6/15/2015

North Main Terminal/United Heckathorn (SW-4)

	Yes	No	N/A	Comments
Are concrete cap surfaces in adequate condition to promote effectiveness of the cap?	X			Minor cracks noted.
Are gravel cover surfaces in adequate condition to promote effectiveness of the cap?	X			Additional gravel needed in area identified in photo 6.
Is storm water drainage infrastructure in adequate condition to prevent exposure of underlying soil to runoff?	X			
Are corrective actions required?	X			Additional gravel needed in area identified in photo 6.
Attach a photograph of areas requiring corrective action.	X			Photograph 6, Appendix A

Describe any recent repairs/maintenance:

No recent corrective actions to concrete cap or gravel cover noted in SW-4 area.

Describe conditions and locations of the capping system which require attention:

Area of gravel cover in need of additional gravel (photo 6).

Describe corrective actions required and their date(s) of implementation:

Continue to monitor for minor cracks to see if their conditions worsen or if they continue to propagate (photo 8).
Add additional gravel to the gravel cover area identified in photo 6.

Signature: Scott Bourne

Date: 6/15/2015

North Main Terminal/United Heckathorn (SW-5)

	Yes	No	N/A	Comments
Are concrete cap surfaces in adequate condition to promote effectiveness of the cap?	X			Minor cracks noted.
Are gravel cover surfaces in adequate condition to promote effectiveness of the cap?	X			Additional gravel needed in area identified in photo 11.
Is storm water drainage infrastructure in adequate condition to prevent exposure of underlying soil to runoff?	X			
Are corrective actions required?	X			Additional gravel needed in area identified in photo 10.
Attach a photograph of areas requiring corrective action.	X			Photograph 10, Appendix A

Describe any recent repairs/maintenance:

Gravel was added in July 2014 in areas of thinning and exposed geotextile in the SW-5 area, as recommended in the 2013-2014 Annual Report.

Describe conditions and locations of the capping system which require attention:

Area of gravel cover in need of additional gravel (photo 10).

Describe corrective actions required and their date(s) of implementation:

Continue to monitor for minor cracks to see if their conditions worsen or if they continue to propagate (photos 9 and 11).
Add additional gravel to the gravel cover area identified in photo 10.

Signature: Scott Bourne

Date: 6/15/2015

North Main Terminal/United Heckathorn (SW-6)

	Yes	No	N/A	Comments
Are concrete cap surfaces in adequate condition to promote effectiveness of the cap?	X			Areas of deteriorated concrete and minor cracks noted.
Are gravel cover surfaces in adequate condition to promote effectiveness of the cap?	X			
Is storm water drainage infrastructure in adequate condition to prevent exposure of underlying soil to runoff?	X			
Are corrective actions required?	X			Sealing of broken areas in concrete cap recommended.
Attach a photograph of areas requiring corrective action.	X			Photographs 17/18, Appendix A

Describe any recent repairs/maintenance:

No recent corrective actions to concrete cap or gravel cover noted in SW-6 area.

Describe conditions and locations of the capping system which require attention:

Continued monitoring of small areas of deteriorating concrete recommended, especially south of inlet 6-DI-15/north of 5-DI-12.

Describe corrective actions required and their date(s) of implementation:

Continue to monitor for minor cracks to see if their conditions worsen or if they continue to propagate (photos 12, 14, 15, 16).
Surface pavement repair and sealing as needed especially south of inlet 6-DI-15.

Signature: Scott Bourne

Date: 6/15/2015

North Main Terminal/United Heckathorn (SW-7)

	Yes	No	N/A	Comments
Are concrete cap surfaces in adequate condition to promote effectiveness of the cap?	X			Minor cracks noted.
Are gravel cover surfaces in adequate condition to promote effectiveness of the cap?			X	
Is storm water drainage infrastructure in adequate condition to prevent exposure of underlying soil to runoff?	X			
Are corrective actions required?		X		
Attach a photograph of areas requiring corrective action.			X	

Describe any recent repairs/maintenance:

No recent corrective actions to concrete cap or gravel cover noted in SW-7 area.

Describe conditions and locations of the capping system which require attention:

Minor cracks observed in the SW-7 concrete cap knoll (photos 13 and 14).

Describe corrective actions required and their date(s) of implementation:

No corrective actions required; however, continue to monitor cracks noted in this inspection for further propagation and settlement.

Signature: Scott Bourne

Date: 6/15/2015